Alaska Groundfish Monitoring Agreement
July 1, 1993 through June 30, 1996

Final Report
NMFS Grant NA37FN0268

By

Bruce P. Simonson

Regional Information Report No. 5J96-16

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
Juneau, Alaska

October 1996

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ABSTRACT

The Alaska Department of Fish and Game (ADF&G), Commercial Fisheries Management and Development (CFMD) Division has received funding assistance from the National Marine Fisheries Service (NMFS) to collect landing information relevant to groundfish fisheries in the North Pacific since 1988. This document is the final report for Grant No. NA37FN0268 – Alaska Groundfish Monitoring Agreement, which covered the period July 1, 1993 through June 30, 1996. (NMFS has continued financial support for the collection of groundfish landing information in Grant No. NA67FN0176.) Major activities discussed in this report include the role of ADF&G groundfish fish tickets in the implementation of the North Pacific Fishery Management Council's (NPFMC) program for Individual Fishery Quotas (IFQ) for sablefish and halibut, the NPFMC program for billing industry for observer coverage on groundfish and shellfish vessels (North Pacific Research Plan), increased groundfish fishery management by ADF&G in state waters, and preliminary work with geographic information systems (GIS) in groundfish fisheries at ADF&G. Future directions for coordinated data collection of groundfish fisheries information between ADF&G and NMFS are discussed.

EXECUTIVE SUMMARY

The Alaska Department of Fish and Game (ADF&G), Commercial Fisheries Management and Development (CFMD) Division maintains electronic records of fisheries landing data submitted to the department on fish tickets. The authority to collect information on fisheries landings is established in AS 5 AAC 39.130.

The National Marine Fisheries Service (NMFS), through this grant (NA37FN0268 — Alaska Groundfish Monitoring Agreement), provides funding to ADF&G to assist with the collection of landing information relevant to groundfish fisheries. These data may be utilized by NMFS for the implementation of fishery management plans (FMP) developed by the North Pacific Fishery Manage-ment Council (NPFMC) in accordance with the Magnuson Fisheries Conservation and Management Act of 1976.

Several high profile and unprecedented activities took place during the funding period covered by this grant. On the programmatic side:

- The NMFS Restricted Access Management (RAM) Division implemented the NPFMC's Individual Fishery Quota (IFQ) program for sablefish and halibut in the North Pacific and Bering Sea. ADF&G groundfish fish tickets were crucial for documenting the catch histories of vessels that participated in these fisheries in the late 1980s. This program resulted in the privatization of common property to qualifying vessel owners; the gross value of the sablefish and halibut quota shares in 1995 has been estimated to be $536 million[1].

- The NMFS Fisheries Management (FM) Division implemented the NPFMC's North Pacific Research Plan, a program designed to fund observer coverage of vessels operating in groundfish fisheries in the Exclusive Economic Zone (EEZ) adjacent to Alaskan waters. ADF&G groundfish fish tickets assisted in documenting vessel participation and nontaxable catch under the Research Plan (catch from state waters). In four billing cycles (six were originally planned for 1995), the program generated $5.6 million[2] from the groundfish and shellfish industries in the Alaska EEZ; fish tickets were also used to help calculate refunds, with interest, after the Research Plan was dismantled by council action late in 1995.

- The NMFS RAM Division implemented the NPFMC's Vessel Moratorium program, where the specific future (vessel) participants in certain groundfish and shellfish fisheries were established. ADF&G groundfish and shellfish fish tickets were an important source of proof regarding the participation of vessels during the qualifying periods established by the NPFMC.

- In late 1995 and early 1996, the State of Alaska opted to increase its role in the management of groundfish fisheries in territorial waters of the state. For example, Alaska's Commercial Fisheries Entry Commission (CFEC) began implementation of a limited entry program for sablefish in Prince William Sound based on permit holder participation as represented on groundfish fish tickets. In

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[1] The value of particular quota shares in the halibut and sablefish IFQ program can be difficult to assess. In 1995, 37.4 million pounds of halibut and 45.7 million pounds of sablefish could be harvested under the IFQ program (NMFS RAM). According to CFEC Reports 96-10N and 96-11N, *Executive summaries of changes under Alaska's halibut and sablefish IFQ programs, 1995*, halibut quota shares obtained around $7.00/pound while sablefish quota shares obtained around $6.00/pound: $536 million = (37.4 million pounds x $7.00) + (45.7 million pounds x $6.00). In fact, offered values for quota shares ranged from $4.00 to $12.00/pound for each species during 1995, so this estimate is probably low.

[2] Kim Rivera, NMFS FM Alaska Region, Juneau, personal communication.

other areas portions of the total allowable catch (TAC) of several groundfish species may be allocated to the state; the portion of the TAC that is allocated to the state may, in part, be computed from historical fishing patterns in state and EEZ waters as represented on ADF&G fish tickets[3].

On the technical side, major activities accomplished by this grant included:

- Assistance in the development and implementation of wide area network (WAN) access to the ADF&G statewide master fish ticket databases maintained in Juneau.

- Introduction of Geographic Information Systems (GIS) into groundfish fish ticket quality-control programs, as well as GIS enhancements for management and research activities.

- Development of a prototype electronic reporting system (daily reports) for shellfish fisheries in the Bering Sea and Aleutian Islands, based on a public carrier electronic mail system.

Because continued funding for activities of this grant has been approved by NMFS, it is appropriate to elaborate possible future directions for the program.

- Direct electronic transmittal is expected to evolve as a (voluntary) means of reporting inseason harvest information to appropriate agencies. In the long term, regulations may make electronic reporting a requirement. In any event, electronic reporting is likely to affect many existing data collection programs and should be planned to minimize negative impacts.

- There appears to be potential for more IFQ programs in Alaskan fisheries. Concerted efforts must be put in place to ensure that quality control and appropriate levels of detail exist in data-collection programs to support IFQ-related council actions.

- Prohibited species, bycatch, total retention, and improved utilization of retained catch are all problem areas where data-collection programs must be adapted to adequately monitor the fishing activities of industry participants.

- AKFIN (Alaskan Fisheries Information Network) will likely assume a leadership role in the coordination of data-collection efforts between state and federal agencies. The Sustainable Fisheries Act (the latest revision of the Magnuson Act) clearly mandates cooperation between federal and state data-collection programs; AKFIN will be a logical facilitator of these cooperative data-collection efforts.

OBJECTIVE

The objective of this project is to monitor domestic shoreside groundfish landings in Alaska, including providing catch and effort data by species group, gear type, vessel, date, and statistical area. These records permit ADF&G to meet its groundfish management responsibilities in the Territorial Sea as

[3] At the time of this writing, the Alaska Board of Fisheries has a proposal before it to separately manage a portion of the total allowable catch in the state's territorial waters.

required under Alaska law and to assist NMFS in meeting its responsibilities within the U.S. EEZ under the Magnuson Act.

ADF&G FISH TICKET PROGRAM

In accordance with AS 5 AAC 39.130, ADF&G collects records of fisheries landings from individuals and businesses who catch or process fish in the state or in waters of the state or in waters managed by the state. These records include identifiers for the CFEC permit holder (skipper), the vessel, the processor (if other than the permit holder), date of landing, gear, statistical area of catch, species of fish, the amount of fish harvested, some pricing data (if applicable), and other information.

These data are collected subject to the confidentiality constraints defined in AS 5 AAC 16.05.815. In general, current departmental policy allows the release of confidential information without notarized authorization from affected parties when four or more parties are represented in summary reports for distribution. Alaska statute also defines the circumstances under which confidential information may be released; in particular, subject to the state's confidentiality requirements, NMFS may obtain access to confidential records in support of the development of FMPs implemented by the NPFMC.

ADF&G groundfish fish tickets have been collected and stored electronically since 1969. The first federal requirement for state fish tickets was put in place in the late 1970s as a result of actions taken by the NPFMC and NMFS. In 1990, through a regulation change implemented by NMFS, the reporting of groundfish fisheries information on state fish tickets became voluntary for fisheries occurring only in the EEZ adjacent to Alaskan territorial waters; many EEZ operators continue to submit fish tickets to ADF&G, thereby documenting their activity in these fisheries.

ADF&G standard procedure for processing fish tickets emphasizes receipt of tickets at the departmental office nearest the location of landing. This is done for several reasons:

- departmental staff nearest the location of landing usually have first-hand knowledge of relevant fisheries and have established working relationships with active participants;
- departmental staff in area offices are able to review tickets for completeness and possible reporting errors and can contact industry participants for clarifications and corrections; and
- local databases in departmental area offices have proven to be the current and best available data for inseason management of relevant fisheries.

Upon receipt of a fish ticket, local area staff imprint a departmental date stamp on the paper ticket (this date stamp is not recorded electronically), review the ticket for completeness and possible corrections, and enter the information on the ticket into a local electronic database. Depending on the fishery and as a matter of departmental policy, these electronic transactions are forwarded to the master statewide fish ticket databases within minutes (groundfish), along with transfers of data that occur at the end of the season (various finfish tickets). The physical fish ticket often remains in an area office for several seasons to allow for ready reference for management and enforcement personnel. All fish tickets are eventually forwarded to CFEC in Juneau for archiving.

As a matter of policy, the responsibility for quality control of data in ADF&G's electronic fish ticket databases lies with the office creating the electronic record. In practice, several additional quality-control programs are implemented by staff at the department's headquarters office. These quality-control programs include software that enforces field validation during data entry, as well as programs that apply field validation and referential integrity to databases after transactions have been uploaded from the area offices to the databases maintained at the headquarters office. In addition, the headquarters office may be notified of potential errors in its databases based on reports ADF&G provides to various agencies and the public. Possible problems are forwarded to area offices for review, after which the local office will generate an updated transaction to the local and statewide databases, if appropriate.

ADF&G GROUNDFISH FISH TICKETS

An ADF&G groundfish fish ticket (vintage 1996) is reproduced in Figure 1 (reduced from the original size of 8.5 x 12 inches).

From the paper ticket, electronic records of groundfish fish tickets capture the skipper (CFEC permit holder), processor, community development quota (CDQ) identifier (if appropriate), vessel, gear, date of landing, location of catch (ADF&G statistical area), species, delivery code (if processed weights are reported), size (for some species), and pounds. Economic data (purchase price), the start of the fishing trip, and port of landing are also recorded electronically but are not routinely subjected to extensive quality-control efforts. In addition, signatures of the CFEC permit holder and purchaser's representa-tive, and an indication that processing occurred within state waters are required on the ticket, but are not captured electronically.

This project conducted an extensive review of the groundfish fish ticket database[4], subjecting electronic records from years 1985–1996 to a set of carefully crafted quality-control programs. While ADF&G's fish ticket databases are never closed (i.e., records may always be corrected with appro-priate evidence), the records in the groundfish fish ticket database are the best available data and represent a stable and accurate reflection of catch and landing histories for the groundfish industry in Alaskan waters. For certain years, they also constitute a representative sample of fishing activity in the Alaskan EEZ.

As of August 1, 1996, the ADF&G groundfish fish ticket database contains records for 207,271 tickets, with a corresponding number of 989,458 items[5]. The earliest records are from 1969, although the department's extensive quality-control programs have only been run on records since 1985.

Table 1 presents ticket and item counts from the groundfish fish ticket database by area office (the office that processed the ticket) and by quarter. The same data are presented graphically in Figure 2. Several conclusions can be drawn from the graphs:

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[4] This program was initiated by Frank Fuller, the Groundfish Fish Ticket Database Manager for this project from 1990 through September 1993. Though Frank's body was never recovered, his death was found to be by accidental drowning in Gastineau Channel near downtown Juneau in the fall of 1993. Frank did much of the initial work on this project. He is and will be missed.

[5] Each fish ticket may report many different species; each individual species on a ticket represents a new item. Furthermore, if a given species was caught in more than one ADF&G statistical area, separate items are generated for each statistical area. Specifically, the key on items defines a unique species/statistical area combination.

- An increasing number of tickets (per year) occurred across years 1985 through 1992 and stabilized around the 1992 level (between 15,000 and 20,000 tickets per year, corresponding to around 100,000 items per year). This period of growth in the number of tickets is related to the transition from joint-venture fisheries to U.S. fisheries in Alaskan waters and the adjoining EEZ. In 1990 submission of ADF&G fish tickets from EEZ operations became voluntary; since that time the number of tickets plateaued at around 18,000 tickets per year.

- The Cordova office entered tickets through 1985; thereafter, tickets normally associated with Prince William Sound and the central Gulf of Alaska were processed by the Homer and Kodiak offices.

- The Dutch Harbor office keyed tickets in 1995, partially in response to the need for faster turn-around of fish ticket data for the NPFMC Research Plan, described in detail below.

- The Kodiak office processes nearly half of the groundfish fish tickets received by the department, though this load has occasionally been shared by the Dutch Harbor office.

There is a wealth of information in the groundfish fish ticket data. For example, a simple cursory review of numbers of participants in groundfish fisheries by area office is presented in Figure 3. From these two graphs it is apparent that the number of processors and vessels that report to any given area office is remarkably constant over the years. These graphs appear to show more variability in the number of unique permits represented on tickets processed by area offices. This does not necessarily indicate variability in the number of skippers (participants), as any given skipper may have several CFEC permits, depending on the fisheries targeted[6].

NMFS IFQ PROGRAM FOR SABLEFISH AND HALIBUT

The principal activity during the first year of the grant was the preparation of a feed of detailed fish ticket records to the NMFS RAM Division Alaska Region office in Juneau. RAM required detailed fish ticket records to determine the historical participation of vessels in the sablefish and halibut fisheries in the Alaskan EEZ.

While ADF&G fish ticket data has been used many times for determining catch histories for license-limitation programs, the use of these data to determine specific vessel participation in the sablefish and halibut fisheries was unprecedented. While vessel information on tickets may have been used in analyses of fishing effort (e.g., in determining breakdown of catch by size of vessels) fish tickets had never been used to determine the catch history of individual vessels. In the NPFMC's IFQ program, the right to commercially fish halibut and sablefish was assigned to the owners of vessels that fished in these fisheries during the late 1980s (1984–1990 for halibut; 1985–1990 for sablefish). Determination of vessel participation (and amount of harvest) was computed from detailed fish ticket records; determination of vessel ownership relied, in large part, on a file of vessel registrations maintained by CFEC.

[6] CFEC routinely conducts careful analyses of these trends and also attempts to monitor the number of participants who move in and out of particular fisheries over time.

An extensive quality-control program was conducted against the 1985–1990 fish ticket data during the first year of this program[7]. Briefly, the main points of the quality-control effort were as follows:

- Regional copies of the groundfish fish ticket databases were retrieved from the local area offices in Ketchikan, Petersburg, Sitka, Homer, Kodiak, and Dutch Harbor. The databases in the local and headquarters offices of ADF&G were frozen for the years spanning 1985 through 1990 while quality-control measures were implemented.

- A careful enumeration of physical tickets in fish ticket archives was conducted. Ticket counts were compared to counts of electronic records; discrepancies were noted and resolved.

- Copies of the fish ticket database delivered to CFEC and NMFS for these years were retrieved, evaluated for completeness, and built into a comprehensive system that compared regional data-base files with the ADF&G headquarters file.

- An extensive review of tickets across these databases was conducted. Tickets with differing values were checked against the original fish tickets. Much of this initial comparison work was conducted by Kurt Iverson and Elaine Dinneford of CFEC.

- Careful reviews of vessel activity, by processor and CFEC permit, were conducted. This process helped to identify miskeyed ADF&G vessel numbers on tickets. In addition, this process indicated cases where the default ADF&G vessel number imprinted on the CFEC permit may not have been the actual vessel fished. These cases were researched and resolved.

- Careful documentation of changes to the electronic database were logged, along with documentation of large-scale programmatic changes to the database. For example, programs were written which changed obsolete product-type codes to their present values. As a result, electronic records for early tickets have the correct current code for product types, even though the paper tickets report the older codes.

In accordance with AS 16.05.815(1), a detailed fish ticket feed was delivered to the NMFS RAM Division on March 23, 1994. The letter of transmittal is included in Appendix A.

A major requirement of the state's confidentiality statute was indicated in the letter of transmittal; namely, CFEC permit holders (skippers) are the primary owner of fish ticket records. For example, each permit holder retains the right to withhold fish ticket records from inclusion in unaggregated IFQ calculations; in particular, vessel owners must have signed record releases from permit holders in order to gain access to detailed fish ticket records if fewer than four permit holders were represented in the vessel's catch history.

ADF&G froze its copy of the groundfish fish ticket database (data for years 1985–1990) while the RAM Division implemented the IFQ program. Procedures were defined whereby disputed records in the fish ticket database would be documented and could be passed on to ADF&G for review and (probable) incorporation into the master fish ticket database. After the initial allocation of quota shares on March 15, 1995, ADF&G received a copy of RAM's modified fish ticket database. Pending suitable support

[7] The success of this program relied heavily on the dedication and meticulous efforts of Elaine Dinneford of CFEC, whose work was of the highest quality. The fact that there were very few disputes of fish ticket records during the implementation of the IFQ program is largely to her credit and to the professional work quality of ADF&G's fish ticket editors and data entry staff.

documentation, these modified records will be reviewed and appropriate corrections made to the primary historical fish ticket database at ADF&G headquarters.

NPFMC RESEARCH PLAN

The major activity in the second year of this grant was related to requirements of the NPFMC's program to raise funds for observer coverage of the groundfish and shellfish fisheries. Funds were to be raised by assessing a fee against the computed value of production by processors in the industry. A component of the fee was to be assessed against large catcher vessels in the industry as well. Certain vessel categories were exempt; catch from state waters was also exempt.

The NMFS data-collection programs in the North Pacific are focused on the processing sector of the industry. Most of these programs are designed to meet the needs of inseason management. In particular, NMFS does not collect and store (electronically) vessel-specific catch information, nor does NMFS differentiate between EEZ and state water harvests in its reporting areas[8].

ADF&G's fish ticket data-collection program identifies vessels that are used in harvest and tracks detailed areas of catch inside and outside state waters[9]. Data collection at this level of detail was critical to the successful implementation of the NPFMC's Research Plan.

To meet the needs of the council's Research Plan, this project undertook two major programs during the second year of the grant:

1. This project enumerated all of ADF&G's groundfish and shellfish statistical areas, with particular attention to defining "inside" vs. "outside" territorial waters (typically three nautical miles from the coastline of mean lower low water).

   A comprehensive review of groundfish and shellfish statistical areas used by ADF&G was undertaken during the latter part of 1994. This review included staff from headquarters and each of the area offices. The final product was a comprehensive listing of all allowable ADF&G "six-digit" statistical areas and a designation of "billable vs. unbillable" (i.e., "inside three miles vs. outside three miles"). This list was transmitted to the NMFS FM Division on February 1, 1995. The associated cover letter is included in Appendix B.

2. This project implemented increased quality-control effort on its "inseason" fish ticket data. The research plan was designed to send out billings on odd months of the year; consequently, fish ticket data needed to be timely and accurate to meet these billing requirements. In particular, adjustments to

[8] In 1995 a modification to the NMFS Weekly Production Report was introduced to capture state waters vs. EEZ catch. This reporting mechanism did not prove reliable and has been subsequently abandoned. (Galen Tromble, NMFS Fisheries Management, Alaska Region, Juneau, personal communication).

[9] None of the state's groundfish statistical areas are larger than 1° longitude by circa ½° latitude — the largest are found west of Cape Sarichef (around 1,600 mi^2 in area); whereas none of the NMFS reporting areas are *smaller* than 2,500 mi^2 (area 519 north of the Alaska Peninsula) — and most are more than two orders of magnitude larger than typical state statistical areas — e.g., area 610 (WGOA) is >125,000 mi^2.

fish ticket data outside of the established billing cycle could result in difficult adjustments and refunds on the bills submitted to processors.

Several informal studies on the timing of the processing cycle of ADF&G fish tickets were conducted during the latter part of 1994. These studies found that from receipt of a fish ticket at an area office, processing of the ticket took anywhere from 4 to 21 calendar days, with an average processing delay of <7 days. The processing took into account local edits, data entry, transfer of the electronic record to headquarters, extensive quality control at headquarters, possible final corrections to the record at the area office, and transmittal of an updated transaction to headquarters. Because state law allows 7 days between a landing and the submission of a ticket to ADF&G, in the worse case, final processing of a legally submitted fish ticket may be as late as one month after the landing.

Because of this, an amendment was made in year two in this grant to fund an additional data entry position in the Dutch Harbor office. This action was designed to allow landings from the Aleutian Islands to be data-entered in the local department office and eliminate the need to forward the original tickets to Kodiak prior to processing.

Fish ticket feeds were delivered from ADF&G headquarters to the council's Research Plan staff in the NMFS FM Division in Juneau during the second week of March, May, July, September, and November of 1995 and in January of 1996. Copies of these data feeds were archived at ADF&G. A copy of the initial transmittal letter can be found in Appendix C.

Although the NPFMC Research Plan was dismantled by council action at the end of 1995, fish ticket feeds continued to be sent to NMFS to assist in determining refunds to processors and vessel operators for monies paid.

STATISTICAL AREA DEFINITION AND GIS DEVELOPMENT

The NPFMC Research Plan provided the groundwork for a careful definition of the state's statistical areas in electronic form[10]. The state routinely provides paper charts to the industry that identify statistical areas to use on fish tickets. In the third year of this project an extensive subtask was put in place that called upon the local expertise of ADF&G to commit the department's groundfish and shellfish statistical areas to electronic form. With the electronic definition of these areas, it will be possible to provide current and custom charts to the industry that delineate the state's statistical areas[11].

At the time of this writing the GIS subtask is approximately 80% complete for groundfish and shellfish statistical areas. Several interim products are presented in Figures 4, 5, and 6:

- Figure 4 — ADF&G, NMFS, and NPFMC management and reporting areas. This figure shows the partitioning of the Gulf of Alaska, Aleutian Islands, and Bering Sea into the large-scale management

[10] Appendix D contains a description of the corrections made to the ADF&G groundfish statistical area table.

[11] While this groundfish/shellfish statistical area project was underway, several other GIS efforts in the department were conceptualized and began to be developed. In particular, a prototype GIS mapping project for the Southeast Alaska office was defined, which seeks to define statistical areas for salmon and anadromous streams that are routinely surveyed by the department.

and reporting areas defined by state and federal agencies. Notable in this figure is the lack of corresponding boundary lines between agencies[12].

- Figure 5 — ADF&G groundfish and shellfish statistical areas (based on 1° longitude by ½° latitude grids, with finer resolution for territorial waters) and overlay of electronic areas on National Oceanic and Atmospheric Administration (NOAA) navigational chart 16013[13].

- Figure 6 — Simultaneous display of NMFS survey data, ADF&G fish ticket data (as a dot-density plot of catch distributed randomly across the reported statistical area), computed bathymetric contours, and NOAA navigational charts. When data and relevant areas are defined electronically, many management and research options are available through GIS.

OTHER USES OF ADF&G GROUNDFISH FISH TICKET DATA

Several other major uses of ADF&G groundfish fish ticket data occurred during the period of this grant:

- CFEC defined eligible applicants for a sablefish limited entry program in Prince William Sound. Individuals eligible for interim (temporary) permits must have documented fishing activity for sablefish in Prince William Sound on ADF&G groundfish fish tickets before January 1, 1995[14].

- ADF&G continues to use groundfish fish tickets for inseason management and for various stock assessment and research activities in Southeast Alaska.

- Historical catch rates of sablefish in territorial waters and the EEZ were analyzed in anticipation of a possible set-aside of TAC for state management of this fishery in the western Gulf of Alaska and Aleutian Islands. Figure 7 contains a preliminary graphical presentation of this analysis.

- ADF&G groundfish fish ticket data were combined with vessel-specific information on CFEC's vessel registration file to determine fishing effort by vessel class for various groundfish fisheries in the western Gulf of Alaska and Aleutian Islands. This work was done as part of the analysis of management options for groundfish fisheries in state waters.

- Summary data on ADF&G groundfish fish tickets is sent to the Pacific Fisheries Information Network (PacFIN) to provide estimates on the activity of shoreside processors in Alaska and as a basis for determining the exvessel value of groundfish fisheries in Alaska and the adjoining EEZ.

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[12] The ADF&G detailed statistical areas are at a sufficient level of resolution for aggregating catch on fish tickets into any of the larger federal areas, with the exception of the long diagonal line defined by NMFS across the Bering Sea (this line approximates the 200-m-depth contour of the continental shelf on the Kula tectonic plate). One option is to prorate the catch on ADF&G groundfish fish tickets from statistical areas that span this line into the appropriate neighboring NMFS zones.

[13] The coastline on NOAA charts and on U.S. Geological Survey topographic maps is not the same. Current ADF&G efforts include the electronic capture of coastlines and territorial waters (3 nautical miles) as represented on NOAA charts.

[14] Additional information on this limited entry program is available from CFEC.

CONCLUSION AND FUTURE DIRECTIONS

The collection of fisheries data in the North Pacific is a complicated task, involving state and federal agencies, industry, and academia. Coordination of this multiagency effort is key to successful and meaningful data collection and should be done to ensure that "what is needed, is collected," and "what is collected, is needed." Further, appropriate levels of precision and timeliness should be defined to adequately address the needs of inseason management, historical databases of groundfish fishery participation, and documentation of fishing activity for enforcement purposes.

One of the primary functions of this grant has been to facilitate coordinated data collection between ADF&G and NMFS for groundfish harvested in the North Pacific. Under the 1996 reauthorization of the Magnuson Act (the "Sustainable Fisheries Act"), there is an increased mandate that federal agencies coordinate their fisheries data-collection efforts with existing state programs. Ensuring that this coordination can (and does) occur will be one of the major challenges confronting state and federal fisheries agencies in the near term.

Awareness of the complexity of data-collection efforts is not a recent revelation: the NPFMC clearly identified the magnitude of this complexity when it released a preliminary data model of groundfish fisheries databases maintained by various governmental agencies in the North Pacific[15].

Partly in response to this data model, an interagency data meeting was held in Juneau on September 18 and 19, 1995. Representatives from the ADF&G CFMD Division, CFEC, NMFS FM (Alaska Region), NMFS RAM (Alaska Region), NPFMC, PacFIN, and the Alaska Fisheries Science Center in Seattle were in attendance. (NMFS enforcement was not represented at this meeting.) Each agency presented information on its data-collection efforts and requirements. Although the complexity of these independent systems was acknowledged, no formal action was taken to ensure future coordination of efforts other than recognizing the need for an interagency data committee that would be empowered to direct data-collection activities in the North Pacific groundfish fisheries[16].

Several recent developments are relevant to future activities funded by this grant:

- NMFS FM (Alaska Region) is developing an electronic reporting system to allow industry to submit a subset of the NMFS-required reports necessary for inseason management of groundfish fisheries in the North Pacific. It is expected that a successful implementation of this electronic reporting system will have a significant impact on the existing paper-based systems of ADF&G, CFEC, and other divisions within NMFS[17].

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[15] NPFMC, Preliminary Data Model of Fisheries Databases in the North Pacific, March 1995. For details, contact Markus Hartley at the North Pacific Fishery Management Council.

[16] From one point of view, the complexity of North Pacific fisheries data management is related to the need to collect aggregated harvest data for inseason management purposes ("rough numbers" in "real-time"), and to simultaneously collect data at a level of detail commensurate with documenting individual participation in fisheries and to meet enforcement concerns.

[17] Some coordination of the electronic reporting system between the NMFS FM (Alaska Region) and the ADF&G groundfish program managers and technicians has taken place, but the ramifications of an extended electronic reporting system have not been discussed within the context of other fisheries and agency reporting requirements.

- The State of Alaska is developing a "one-stop shopping" strategy for the seafood processing industry in Alaska. In particular, there is intent to consolidate the licensing and reporting requirements of the state Departments of Fish and Game, Revenue, and Environmental Conservation for the seafood industry. This consolidation may impact key fields on ADF&G reporting documents and is likely to have an impact on processors who must report their activities both to the state and to NMFS.

- NMFS is embarking on a nationwide "Core Statistics" program that seeks to document biological and economic activities in the nation's fisheries. While the standards for the data collected under the Core Statistics program have not yet been developed, it is anticipated that this program will, at least in part, rely upon state data-collection efforts.

- The Sustainable Fisheries Act of 1996 (the reauthorized Magnuson Act) will mandate new data-collection strategies for the nation's fisheries. In part, there may be a refocusing on the type of data collected in support of FMPs. Other portions of this act will influence cooperative data-collection efforts between state and federal programs.

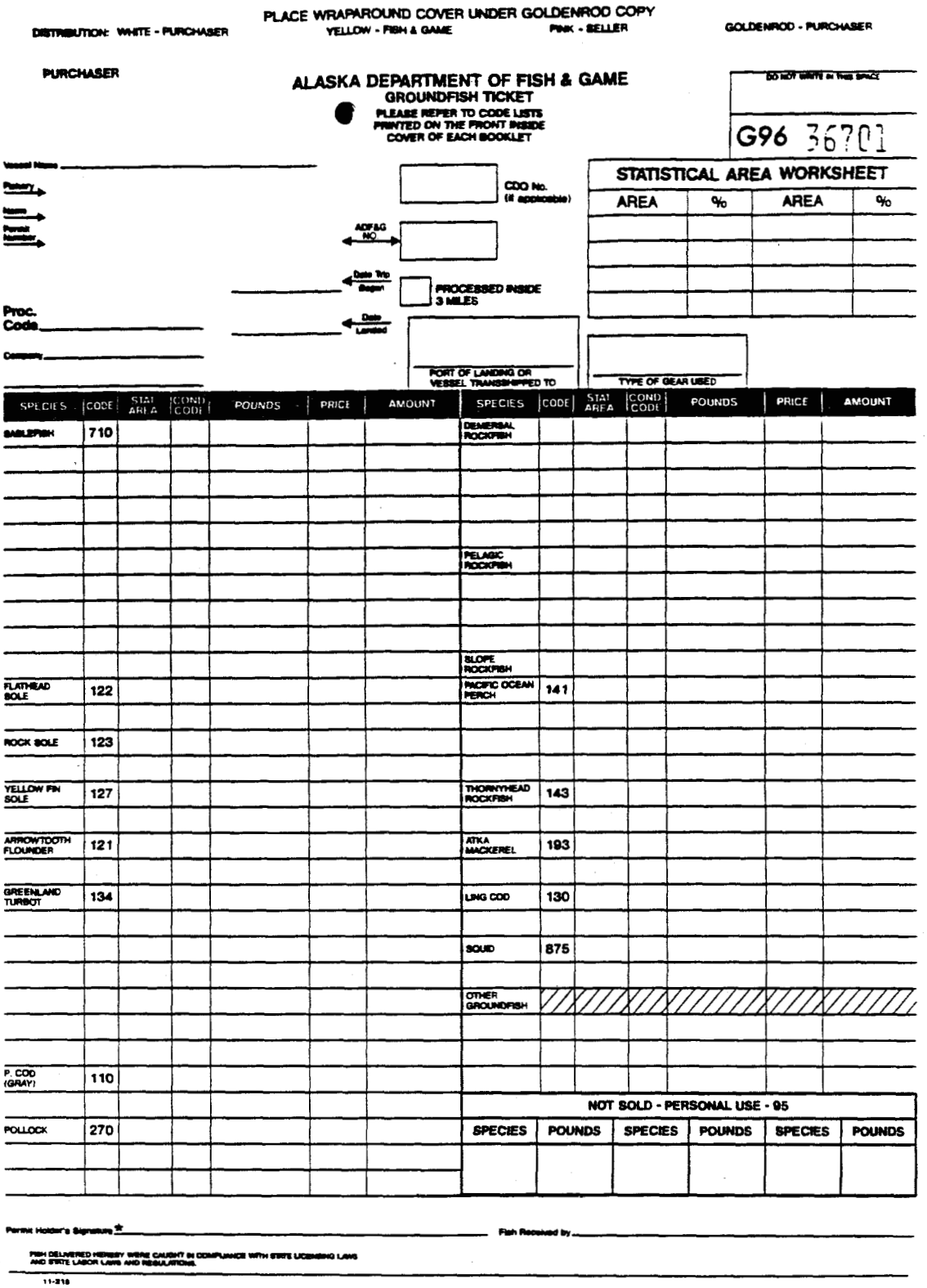
- Congress has established funding for the Alaska Fisheries Information Network (AKFIN), which will be charged with consolidating and integrating various groundfish and shellfish fisheries data in the North Pacific. The activities of AKFIN will be directed by management and technical steering committees with members from ADF&G, CFEC, NPFMC, and NMFS. After data-sharing arrangements between state and federal agencies have been finalized, it is expected that AKFIN will develop appropriate integrated data models and the telecommunications infrastructure to support a relational database of relevant harvest, production, and survey information for groundfish and shellfish fisheries data in the North Pacific[18].

[18] The AKFIN manager position is expected to be filled in November 1996.

Table 1. Groundfish fish ticket and item counts, by quarter and area office, 1985–1996.

		No Catch Date		Jan - Mar		Apr - Jun		Jul - Sep		Oct - Dec		Year Totals	
Year	Office	Tickets	Items	Tickets	Items	Tickets	Items	Tickets	Items	Tickets	Items	Tickets	Items
1985	Ketchikan	0	0	61	185	170	442	1	3	0	0	232	630
	Petersburg	0	0	72	194	180	660	46	219	67	278	365	1351
	Sitka	2	7	350	1552	440	1662	323	1187	223	1156	1338	5564
	Cordova	0	0	24	139	204	1383	0	0	0	0	228	1522
	Homer	0	0	13	59	62	150	115	507	29	141	219	857
	Kodiak	0	0	109	268	268	1600	44	124	239	516	660	2508
	Dutch Harbor	0	0	225	256	220	498	307	1154	36	118	788	2026
1986	Ketchikan	0	0	1	4	0	0	0	0	0	0	1	4
	Petersburg	0	0	109	398	248	1135	103	633	128	479	588	2645
	Sitka	0	0	263	1156	1078	4822	322	1693	195	1030	1858	8701
	Homer	0	0	33	87	407	2358	30	41	90	259	560	2745
	Kodiak	0	0	372	958	904	2157	376	1170	741	2013	2393	6298
	Dutch Harbor	0	0	194	469	0	0	0	0	0	0	194	469
1987	Ketchikan	0	0	1	2	0	0	0	0	0	0	1	2
	Petersburg	0	0	23	26	1034	6367	309	2350	72	250	1438	8993
	Sitka	0	0	554	2746	744	2531	281	1805	285	1328	1864	8410
	Homer	0	0	338	583	1338	2605	138	478	268	492	2082	4158
	Kodiak	0	0	1216	2617	2142	7060	1975	5469	1944	4532	7277	19678
1988	Ketchikan	0	0	1	2	0	0	0	0	0	0	1	2
	Petersburg	5	11	58	222	779	3133	141	844	74	201	1057	4411
	Sitka	0	0	418	2065	1748	10057	398	1818	317	1147	2881	15087
	Homer	0	0	262	603	942	6359	139	1074	96	572	1439	8608
	Kodiak	0	0	2050	6228	1988	8517	1302	7012	1707	6665	7047	28422
1989	Ketchikan	0	0	1	2	0	0	0	0	0	0	1	2
	Petersburg	0	0	43	149	634	3751	363	1928	43	88	1083	5916
	Sitka	1	4	244	1367	1719	8762	284	1055	127	679	2375	11867
	Homer	0	0	19	97	532	4491	152	1430	122	994	825	7012
	Kodiak	0	0	1921	7920	2173	15527	1463	9049	1073	6442	6630	38938
1990	Ketchikan	0	0	37	201	643	2409	30	98	106	467	816	3175
	Petersburg	0	0	72	190	686	3028	151	1193	23	47	932	4458
	Sitka	0	0	164	1164	1159	7616	263	719	109	509	1695	10008
	Homer	0	0	110	831	1332	8903	270	1880	110	790	1822	12404
	Kodiak	0	0	2853	13797	3059	23111	2667	22448	1391	10582	9970	69938
1991	Ketchikan	0	0	197	892	669	2533	118	247	40	170	1024	3842
	Petersburg	0	0	98	206	627	3486	344	1604	18	65	1087	5361
	Sitka	0	0	234	1092	892	5427	371	1509	124	571	1621	8599
	Homer	0	0	698	1989	1682	11151	144	2248	179	1670	2703	17058
	Kodiak	1	2	4924	22958	3177	27040	2858	28678	678	4498	11638	83176
1992	Ketchikan	0	0	175	1216	358	1685	80	173	143	627	756	3701
	Petersburg	0	0	60	122	1054	6105	359	1989	319	646	1792	8862
	Sitka	0	0	313	1725	756	4541	353	1730	168	777	1590	8773
	Homer	0	0	1688	6482	1694	10739	382	4038	179	1564	3943	22823
	Kodiak	1	6	3747	30166	1458	22820	2950	24496	685	5805	8841	83293
1993	Ketchikan	0	0	109	805	435	2273	178	344	36	239	758	3661
	Petersburg	2	3	109	214	631	2829	418	1706	210	336	1370	5088
	Sitka	0	0	307	1506	782	4687	305	1186	92	741	1486	8120
	Homer	0	0	865	3980	1217	6622	77	262	69	356	2228	11220
	Kodiak	0	0	4292	24840	1696	16489	1952	19494	600	5622	8540	66445
1994	Ketchikan	0	0	59	528	392	1828	158	421	15	78	624	2855
	Petersburg	0	0	60	173	852	5062	414	2292	236	1240	1562	8767
	Sitka	0	0	291	1705	741	4329	410	2030	151	827	1593	8891
	Homer	0	0	798	2647	952	5805	360	979	43	164	2153	9595
	Kodiak	0	0	3893	25273	1604	15108	2471	25666	1176	8303	9144	74350
1995	Ketchikan	0	0	23	141	462	3180	531	2346	156	716	1172	6383
	Petersburg	0	0	80	251	435	2527	472	3178	313	1744	1300	7700
	Sitka	0	0	353	2316	619	4184	272	1327	168	927	1412	8754
	Homer	0	0	1028	3218	882	4186	401	781	355	587	2666	8772
	Kodiak	1	4	5044	33557	1632	15058	752	8597	500	4047	7929	61263
	Dutch Harbor	0	0	13	170	419	2198	1954	20659	522	2073	2908	25100
1996	Ketchikan	0	0	102	689	220	1038					322	1727
	Petersburg	0	0	135	478	576	3325					711	3803
	Sitka	0	0	448	2788	800	4762					1248	7550
	Homer	0	0	1206	3023	675	2120					1881	5143
	Kodiak	0	0	4237	25724	875	8265					5112	33989

Data as of 1996/07/01



PLACE WRAPAROUND COVER UNDER GOLDENROD COPY

DISTRIBUTION: WHITE - PURCHASER YELLOW - FISH & GAME PINK - SELLER GOLDENROD - PURCHASER

PURCHASER

ALASKA DEPARTMENT OF FISH & GAME
GROUNDFISH TICKET
PLEASE REFER TO CODE LISTS PRINTED ON THE FRONT INSIDE COVER OF EACH BOOKLET

DO NOT WRITE in This SPACE
G96 36701

Vessel Name
Fishery
Name
Permit Number
Proc. Code
Company

CDQ No. (if applicable)
ADF&G NO.
Date Trip Began
Date Landed
PROCESSED INSIDE 3 MILES
PORT OF LANDING OR VESSEL TRANSHIPPED TO
TYPE OF GEAR USED

STATISTICAL AREA WORKSHEET

AREA	%	AREA	%

SPECIES	CODE	STAT AREA	COND CODE	POUNDS	PRICE	AMOUNT
SABLEFISH	710					
FLATHEAD SOLE	122					
ROCK SOLE	123					
YELLOW FIN SOLE	127					
ARROWTOOTH FLOUNDER	121					
GREENLAND TURBOT	134					
P. COD (GRAY)	110					
POLLOCK	270					

SPECIES	CODE	STAT AREA	COND CODE	POUNDS	PRICE	AMOUNT
DEMERSAL ROCKFISH						
PELAGIC ROCKFISH						
SLOPE ROCKFISH						
PACIFIC OCEAN PERCH	141					
THORNYHEAD ROCKFISH	143					
ATKA MACKEREL	193					
LING COD	130					
SQUID	875					
OTHER GROUNDFISH						

NOT SOLD - PERSONAL USE - 95

SPECIES	POUNDS	SPECIES	POUNDS	SPECIES	POUNDS

Permit Holder's Signature *
Fish Received by
FISH DELIVERED HEREBY WERE CAUGHT IN COMPLIANCE WITH STATE LICENSING LAWS AND STATE LABOR LAWS AND REGULATIONS.
11-318

Figure 1. ADF&G groundfish fish ticket, vintage 1996. Tickets from earlier years do not differ substantially from this ticket (inside/outside processing and the CDQ code were added in 1994). ADF&G fish tickets record the skipper (CFEC permit holder), the processor (or processor's representative), the ADF&G vessel number, statistical area of catch, catch date, landing date, port, species, delivery code, pounds, and signatures of permit holder and processor representative. For some species, purchase price and breakdown of catch by size is available.

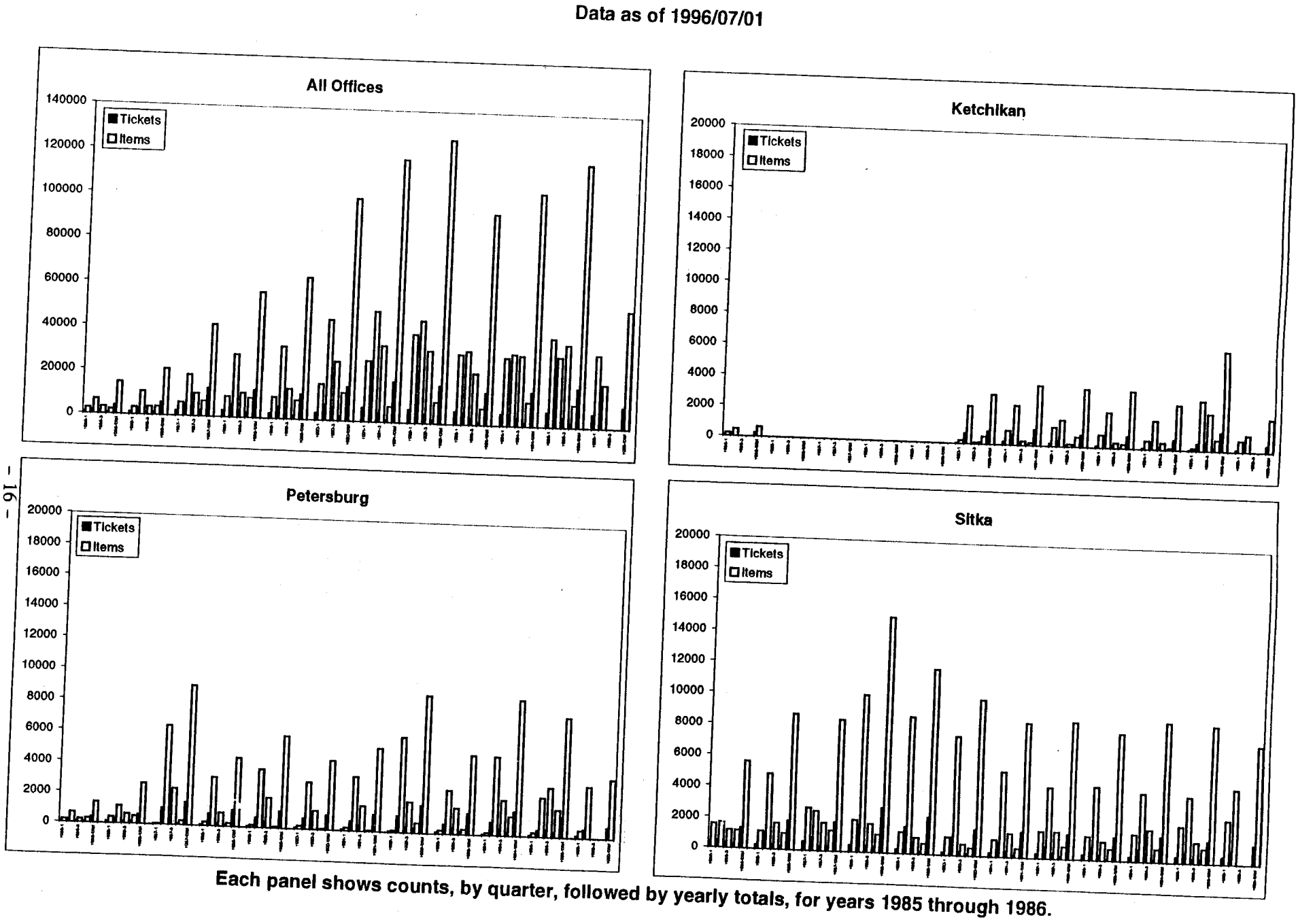


Figure 2. ADF&G groundfish fish tickets and item counts, by area office, 1985–1996.

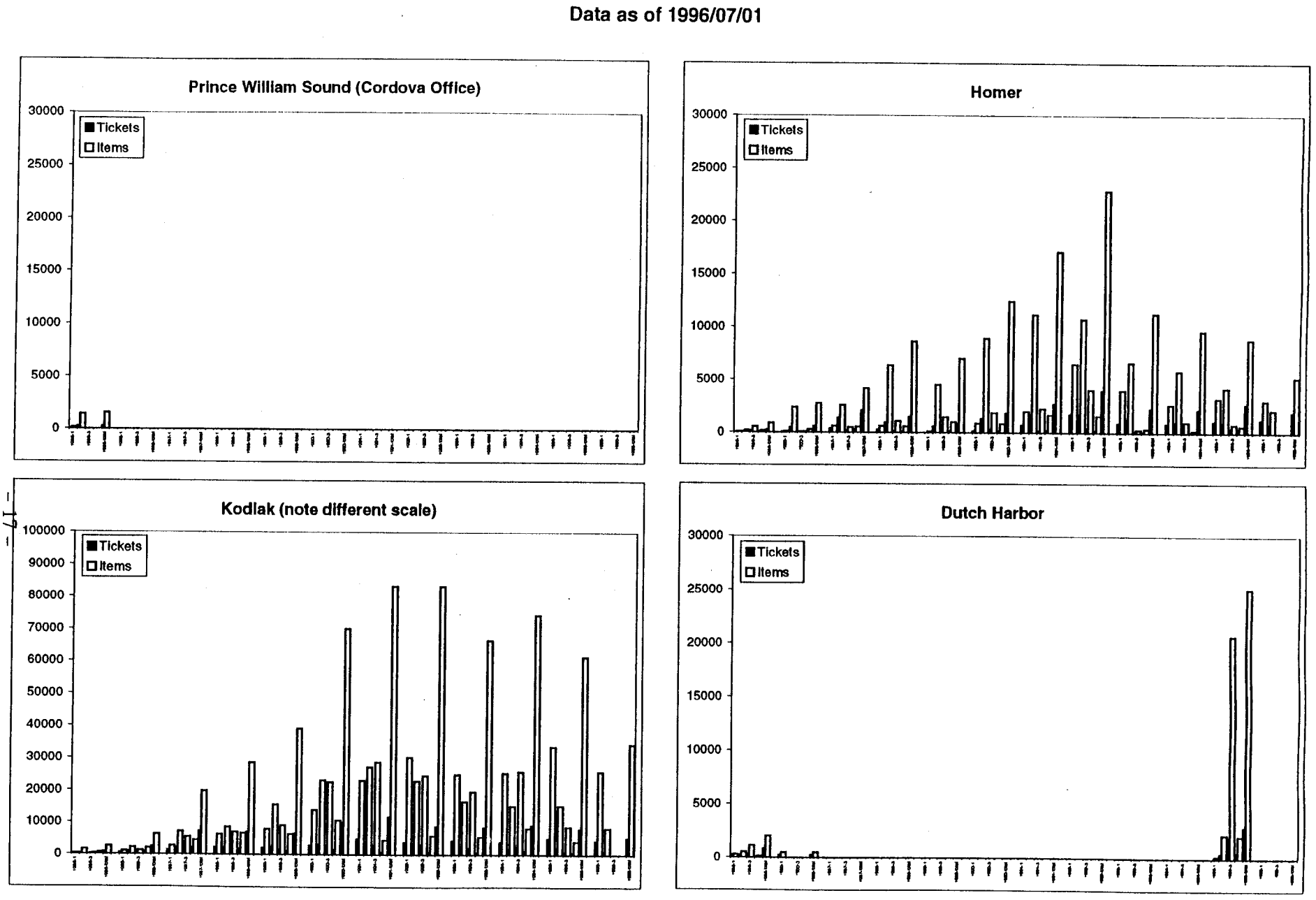


Figure 2 (continued). ADF&G groundfish fish tickets and item counts, by area office, 1985–1996.

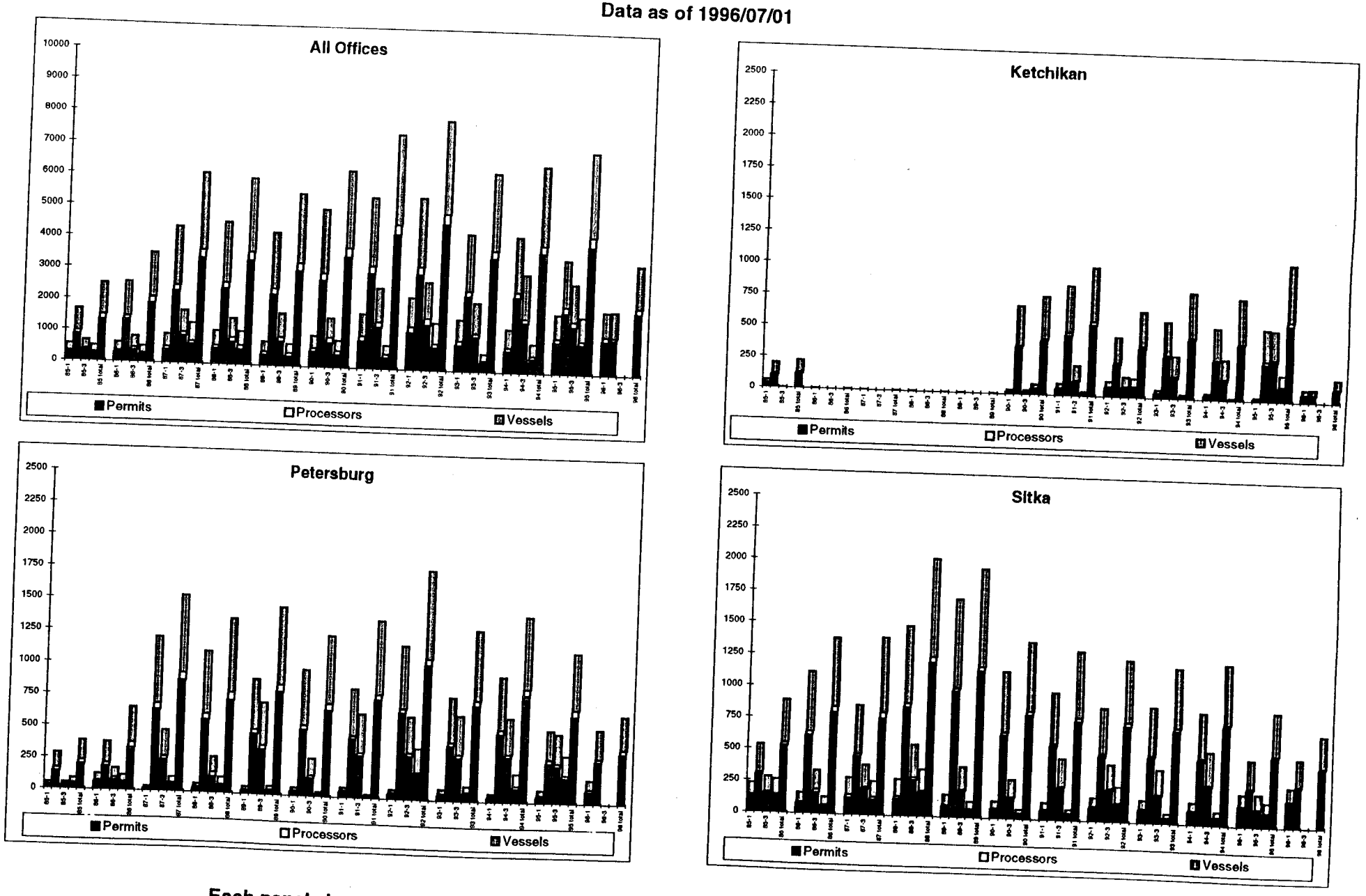


Figure 3. Unique permit holder, processor, and vessel counts found on groundfish fish tickets, as processed by ADF&G area offices.

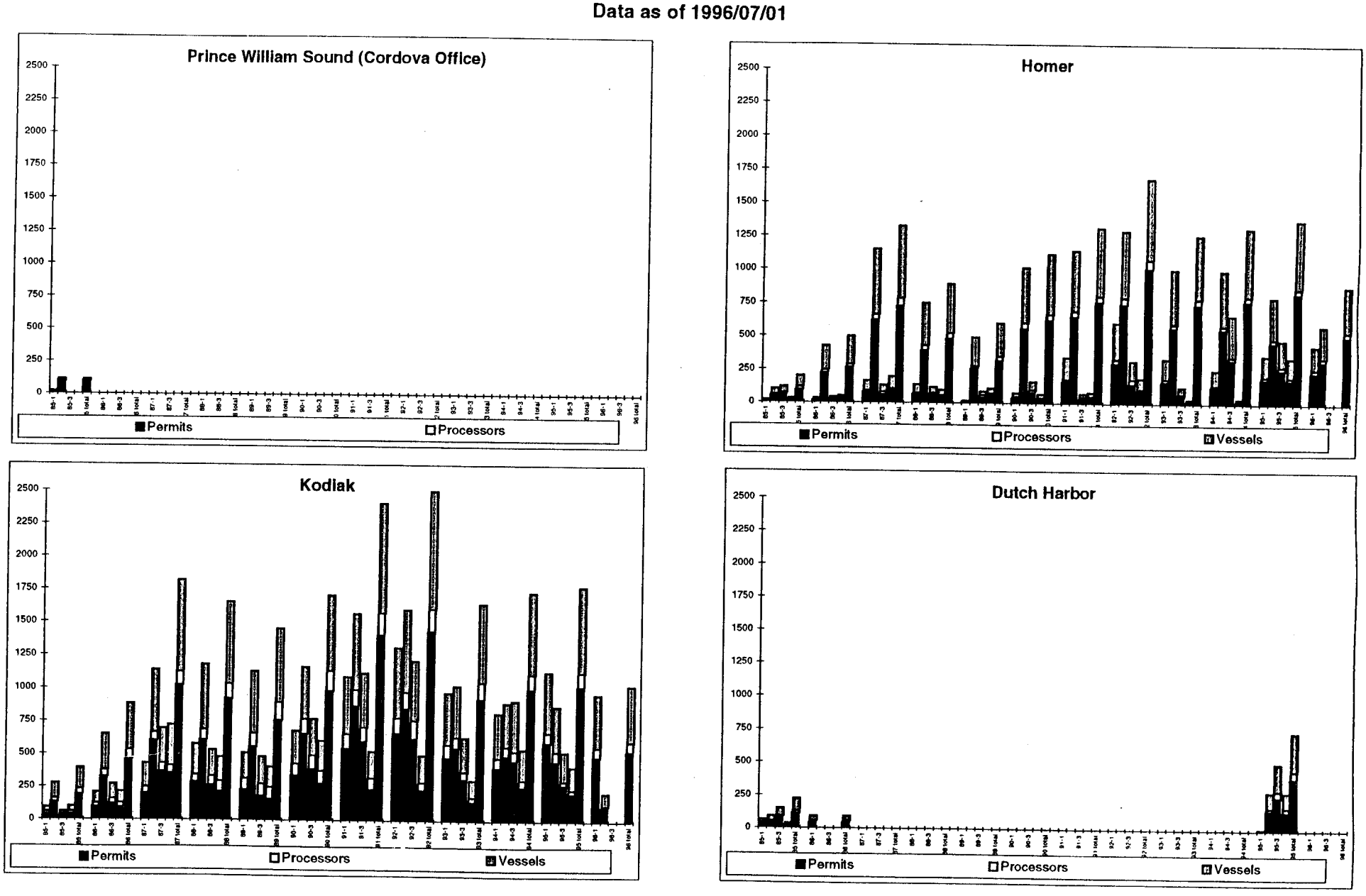


Figure 3 (continued). Unique permit holder, processor, and vessel counts found on groundfish fish tickets, as processed by ADF&G area offices.

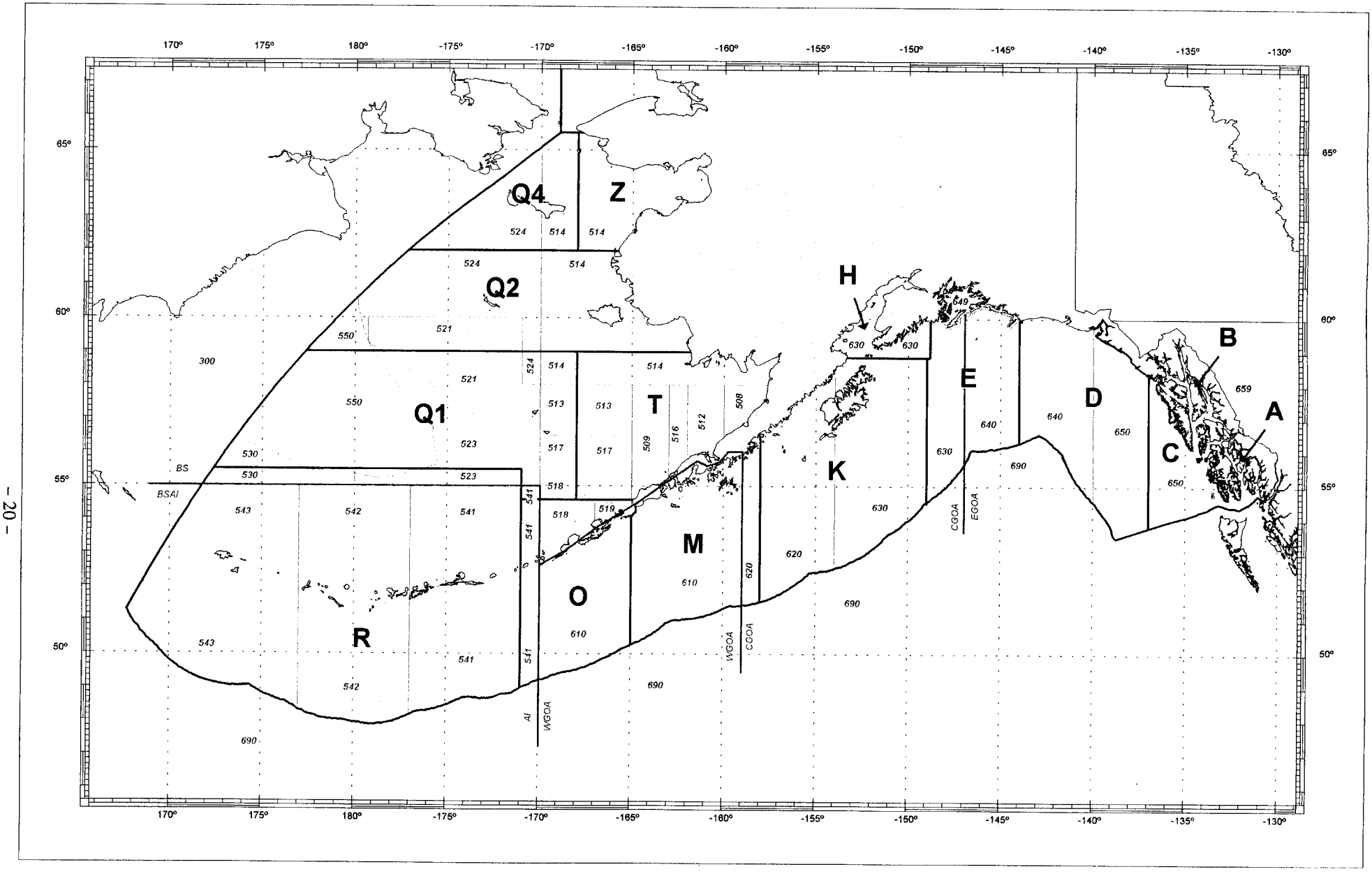


Figure 4. Reporting areas: ADF&G, NMFS Alaska Region, and NPFMC.

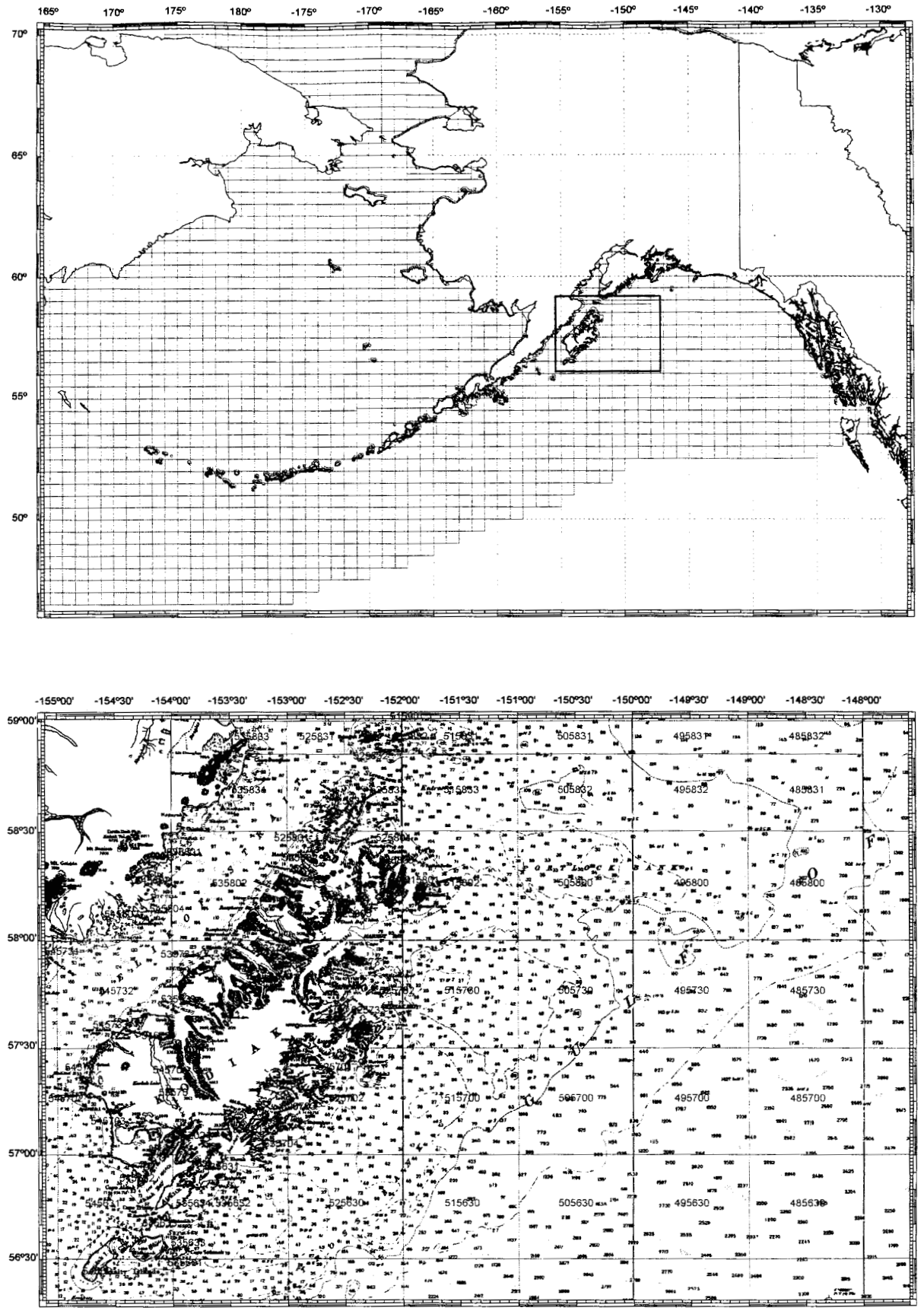


Figure 5. Current GIS efforts underway with the groundfish fish ticket project include the electronic delineation of ADF&G groundfish statistical areas, and the ability to superimpose these areas on raster images of NOAA navigation charts.

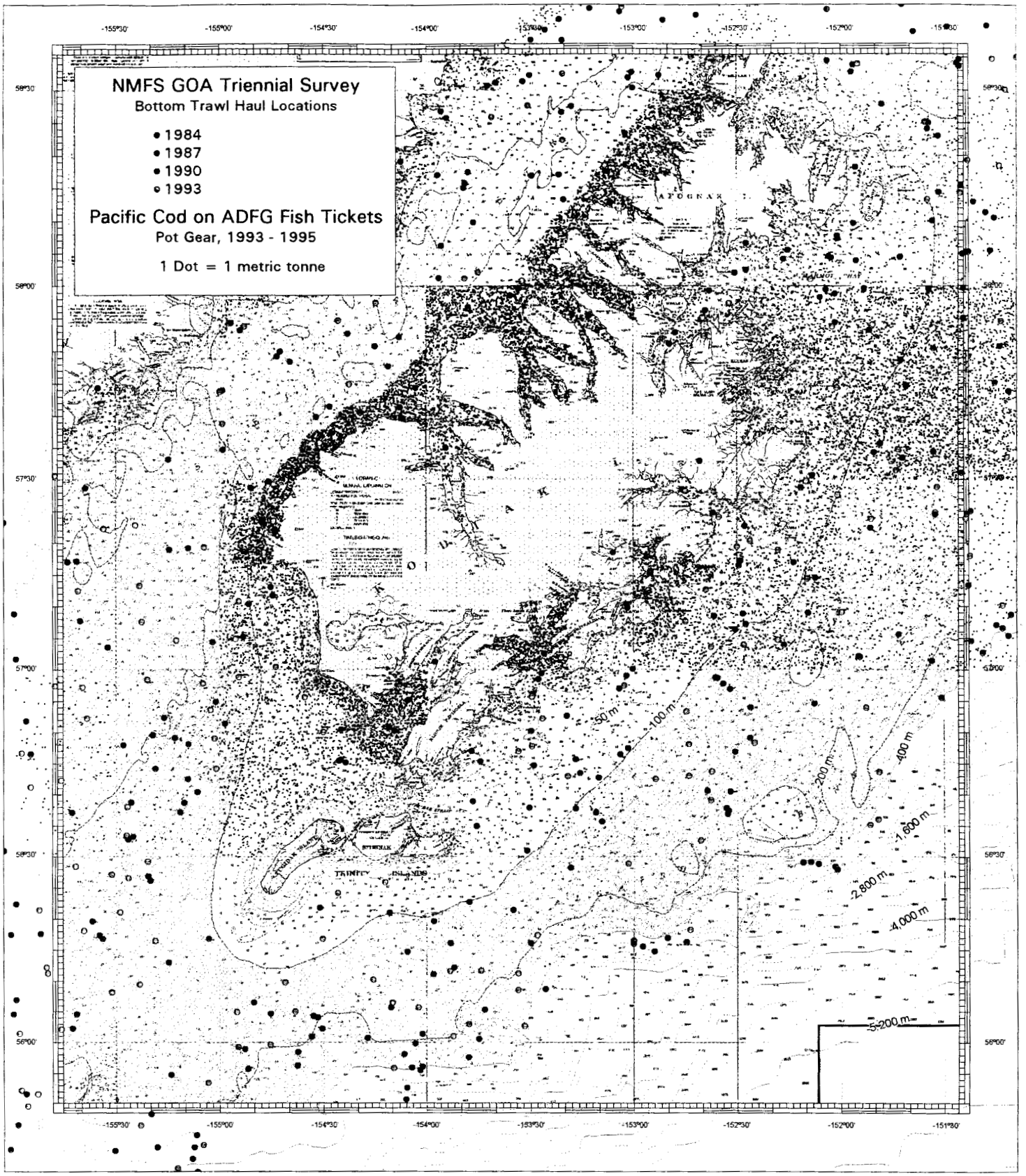
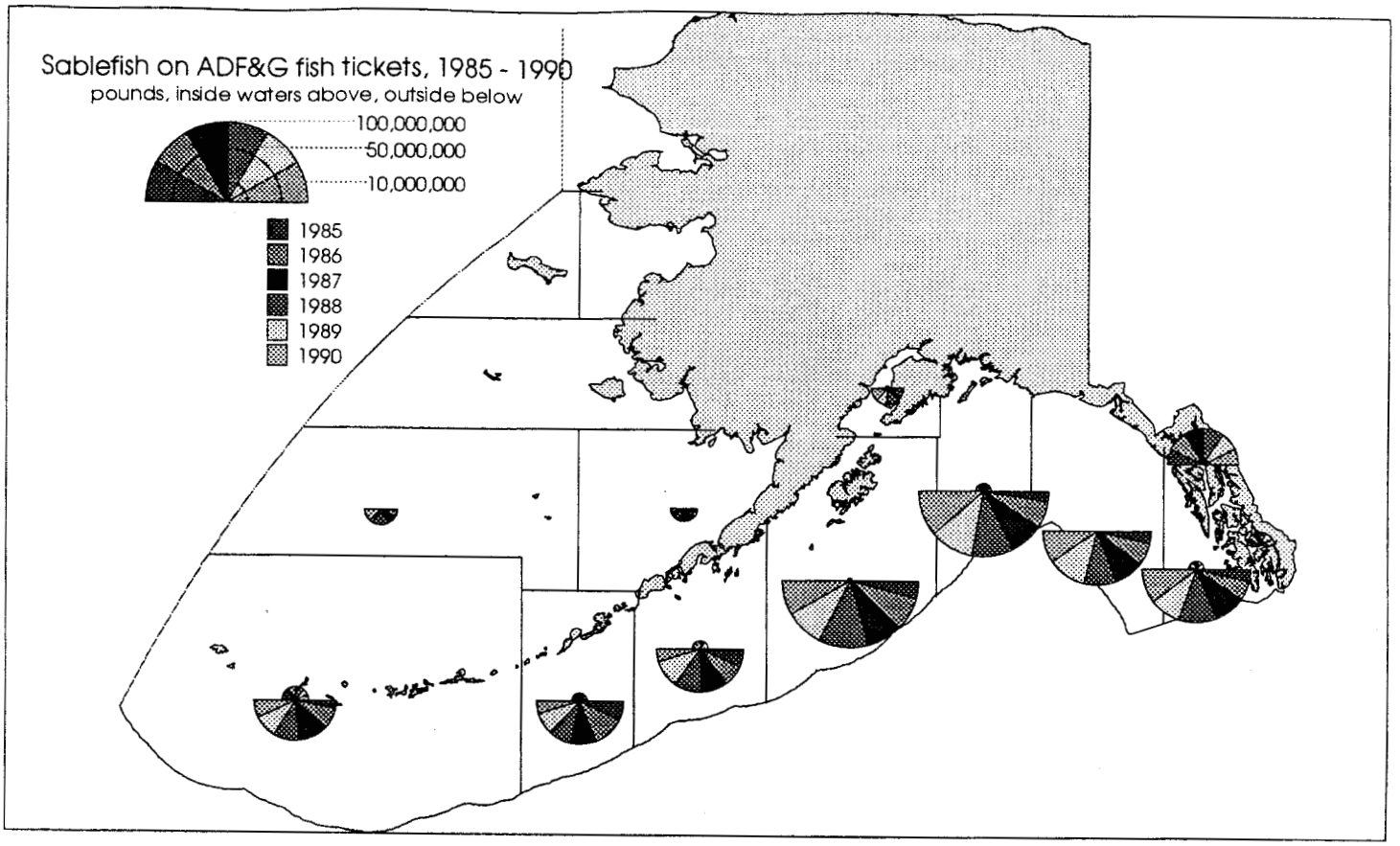


Figure 6. Coordination of research and management data from state and federal programs is increasingly feasible with adequately georeferenced and mutually compatible data sets.

In this figure, haul locations from the NMFS GOA triennial surveys are integrated with ADF&G statistical areas, Pacific cod catch on ADF&G fish tickets, crude (ETOPO5) bathymetric contours and polygons, and a raster image of NOAA navigation chart 16530.



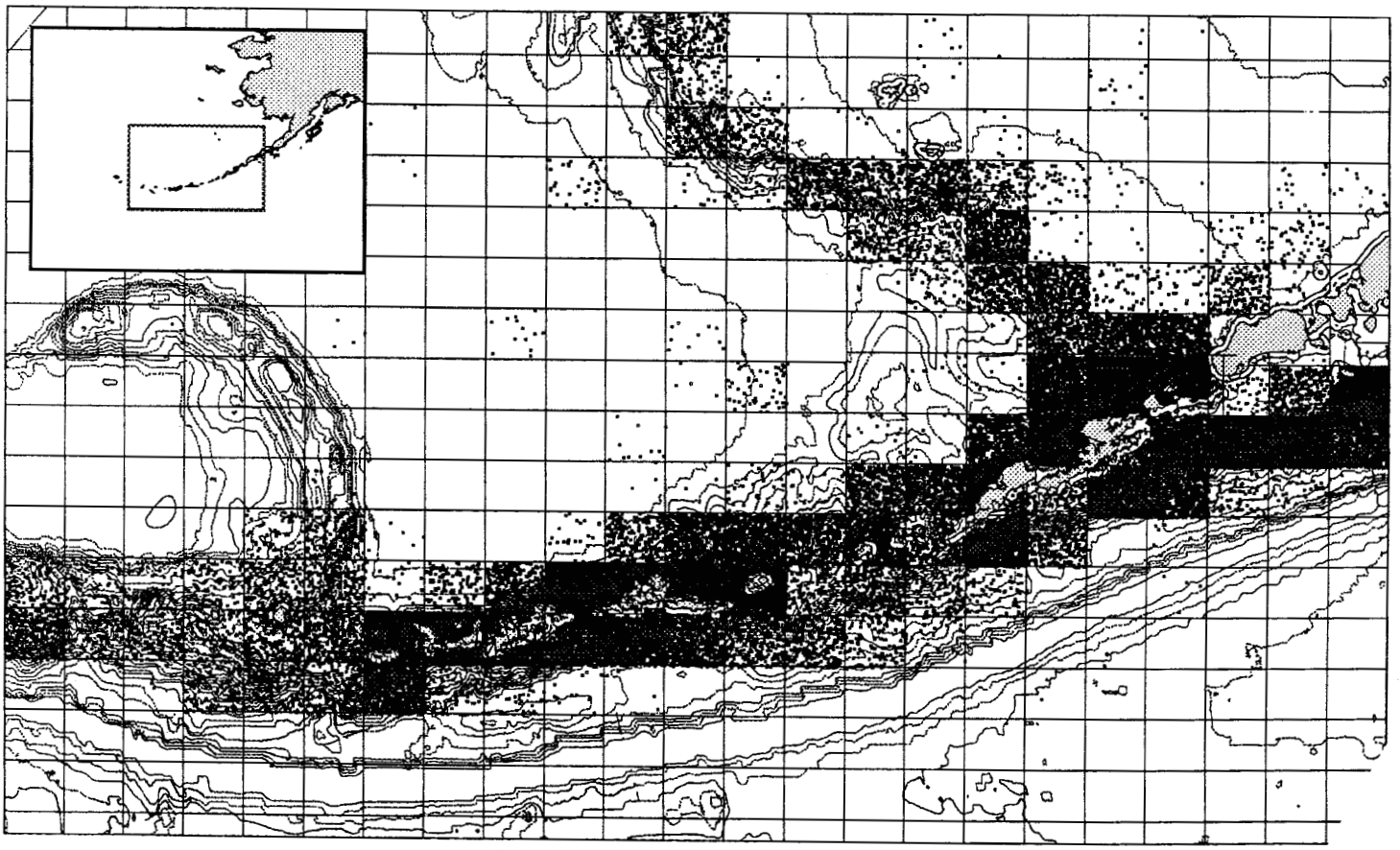


Figure 7. (Top) — Historical harvest of sablefish reported on ADF&G fish tickets, inside waters and outside waters, 7
(Bottom) — Dot-density graphic of sablefish harvest in the Aleutians, overlaid with bathymetric contours.

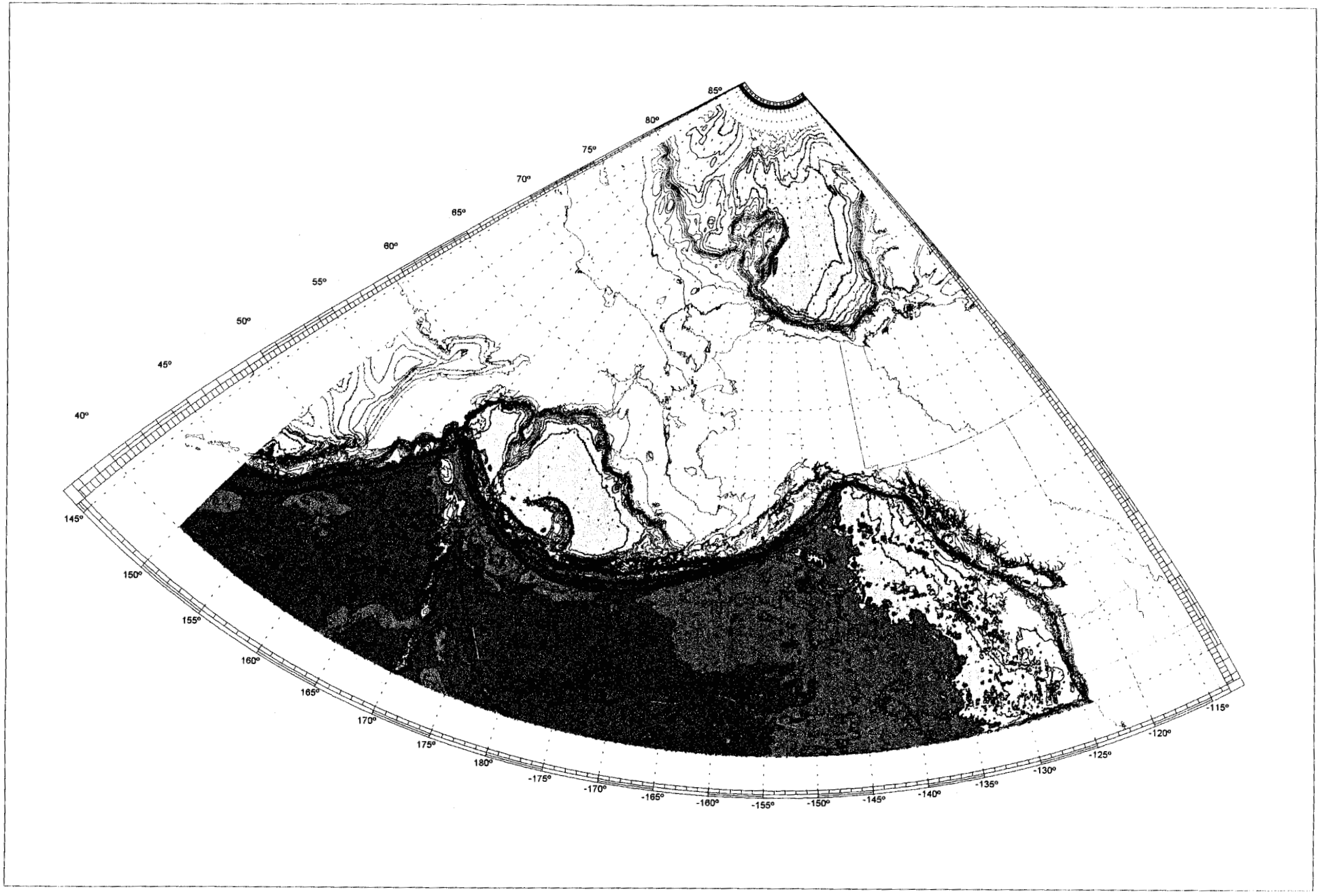


Figure 8. Crude bathymetric contours generated from ETOPO5 world elevation data.

APPENDIX

APPENDIX A
Letter of Transmittal of Fish Ticket Data to NMFS RAM for IFQ Program

March 23, 1994

Phil Smith, Chief
RAM Division, NMFS
P. O. Box 21668
Juneau, AK 99802-1668

RE: ADF&G groundfish fish ticket data extract
for NMFS/RAM sablefish IFQ program

Dear Mr. Smith:

You have requested an extract of data from the Alaska Department of Fish and Game (ADF&G) groundfish fish ticket database for the preparation and implementation of the Individual Fishery Quota (IFQ) program established by the North Pacific Fisheries Management Council (NPFMC) for Alaska's Exclusive Economic Zone (EEZ). ADF&G is happy to provide this detailed information in accordance with Alaska Statute, Section 16.05.815.

ADF&G GROUNDFISH FISH TICKET IFQ DATA EXTRACT

As per your data request, for the years 1985 through 1987, only records with species code 710 (sablefish) were selected. For 1988 through 1990, all species represented in the ADF&G groundfish fish ticket database were selected. For all years, the extract was also limited to species harvested with a specific set of gear types, as per your request. The layout of the electronic records in this extract is provided in attachment 1. The date of this extract from the official harvest database was March 15, 1994.

A brief summary of the data as requested for this extract is provided in the following table.

1994/03/15 ADF&G NMFS/RAM IFQ GROUNDFISH FISH TICKET EXTRACT - RECORD COUNTS

YEAR	SPECIES CODE 710	OTHER SPECIES
1985	7024	0
1986	8554	0
1987	14596	0
1988	20294	14265
1989	19371	12519
1990	20395	15795

For additional information regarding the composition of this data extract, by delivery code and gear type, please refer to attachment 2, "Reported Poundages for Species 710 in the 1994/03/15 NMFS/RAM IFQ Data Extract".

A copy of the database from which these data were extracted has been archived at ADF&G and has also been forwarded to the Commercial Fisheries Entry Commission (CFEC) for the express purpose of reporting detailed harvest histories to those permit holders who request it.

DATA REVIEW AND QUALITY CONTROL

These data in the groundfish database have been recently reviewed and subjected to an extensive quality control (QC) effort. With the capable help of regional personnel in the ADF&G, staff at the CFEC, and reference to the original source documents (fish tickets), all known errors which may have occurred in prior releases of these data have been corrected. As such, the detailed records provided with this letter of transmittal constitute the best available data as of this date. Please be advised to discard as obsolete any previous snapshots of these data you may have obtained from the ADF&G or other sources.

STRENGTHS AND LIMITATIONS OF FISH TICKET DATA

By statute and through regulations, ADF&G collects harvest information from those who harvest or process fish in Alaska waters. The department's fish ticket databases represent a substantial resource of harvest information for over 25 years of fishing effort off the coast of Alaska, providing detailed commercial harvest information on over 200 species and over 2500 statistical areas monitored and managed by the state.

ADF&G collects and maintains this harvest information as an important component of its fisheries management effort, relying upon summarized and statistical views of these data to inform its management decisions, determine trends in harvest effort, and assess the overall impact on marine ecosystems due to commercial fishing activity. Since 1987 the collection of groundfish harvest information through fish tickets has been supported by a NMFS grant.

The department recognizes that the NMFS/RAM implementation of its sablefish IFQ program requires an unprecedented use of ADF&G groundfish fish ticket data at the detailed record level. The department also appreciates the complexity of the IFQ program. Given the IFQ program's reliance on detailed fish ticket information, it is appropriate to indicate known strengths and limitations of fish ticket data which have been requested. For details, please refer to attachment 3, "Strengths and Limitations of Data Fields in the 1994/03/15 NMFS/RAM IFQ Data Extract".

MODIFICATIONS TO THE ADF&G GROUNDFISH FISH TICKET DATABASE

Alaska statute and Federal regulations require that all commercial harvest of fish in Alaskan waters, and all harvest of groundfish in the Alaskan EEZ for 1985-1989, be correctly reported to the ADF&G. (The Federal regulation for reporting groundfish harvest in the EEZ through ADF&G fish tickets was discontinued in 1990).

ADF&G recognizes the opportunity for additional QC efforts on its groundfish database due to the data verification and appeal process associated with the NMFS/RAM's IFQ program. Again, please refer to attachment 3 for details on how fields in this data extract may be affected.

ADF&G is especially interested in any valid corrections of misreported information on fish tickets, as well as incorporating into its groundfish database all valid harvest data which are yet unreported.

Our primary goal is to ensure that the ADF&G fish ticket database remains the best source of harvest information as reported on fish tickets. The department has in place regulations that require correct reporting of all groundfish species that have been harvested, as well as a policy of committing these records to electronic form, with spatial and temporal resolution consistent with standard fish ticket reporting procedures.

ADF&G personnel are working closely with NMFS/RAM staff to establish a procedure for incorporating changes to the groundfish harvest database based on new information generated through the RAM data verification and appeal process. As part of this procedure, we hope to establish a mechanism for documenting any divergence between the official harvest history maintained by ADF&G, and the IFQ allocation database maintained by NMFS/RAM.

It is our hope to make the evaluation and subsequent incorporation of appropriate changes to the fish ticket harvest database as simple and direct as possible, consistent with statutory requirements.

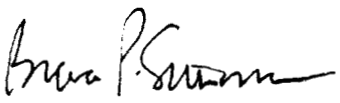
CONCLUSION

Because commercial harvest information is a primary data source for fisheries management and research, ADF&G places great importance on maintaining its fish ticket databases. The department is pleased these data can be of use to NMFS/RAM in the implementation of its management plan for sablefish fisheries.

ADF&G and NMFS/RAM technical staff have worked in close cooperation to ensure this data extract meets format specifications for the IFQ computer system. It is our intent to continue this working relationship, along with appropriate staff at CFEC, to monitor and report the evolution of fish ticket data during and after the IFQ data verification and appeal period.

Please do not hesitate to contact me should you require additional information regarding this fish ticket data extract.

Sincerely,



Bruce P. Simonson
Analyst/Programmer
Groundfish Database Manager

Attachments:

1) Data Record Layout for NMFS/RAM IFQ 94/03/15 Data Feed
2) Reported Poundages for Species 710 in the 94/03/15 NMFS/RAM Data Extract
3) Strengths and Limitations of Data in the 94/03/15 NMFS/RAM Data Extract

cc: Phil Rigby, ADF&G
Carmine DiCostanzo, ADF&G
Kurt Schelle, CFEC
Elaine Dinneford, CFEC
Jesse Gharrett, NMFS/RAM;
Ann Graham, NMFS/RAM

BPS\pjs
a:\xmit_ifq.wp5

ATTACHMENT 1 -- Data Record Layout for NMFS/RAM IFQ 94/03/15 Data Feed

columns	data field
001 - 002	adfg archives, fish ticket year
003	
004 - 004	requested constant, for nfms/ram data source, always set to A
005	
006 - 006	adfg archives, batching area office
007	
008 - 010	adfg archives, batch number
011	
012 - 017	adfg archives, fish ticket number
018	
019 - 023	reported processor code
024	
025 - 029	reported adfg vessel number
030	
031 - 040	cfec permit
041	
042 - 050	reported date of landing
051	
052 - 060	reported or computed "catch" date
061	
062 - 062	requested constant, for data nfms/ram, always set to "?"
063	
064 - 065	reported or computed gear type
066	
067 - 068	reported or computed harvest code
069	
070 - 072	adfg archives, item number
073	
074 - 079	reported or computed adfg statistical area
080	
081 - 083	reported adfg species code
084	
085 - 091	reported or computed pounds, delivered weight, (not whole weight)
092	
093 - 094	reported delivery code (product type)
095	
096 - 096	reported size / ancillary product code
097	
098 - 104	reported value of delivered product (in dollars)

Gear codes in NMFS/RAM IFQ 94/03/15 Data Feed, species 710

00	null value in database
06	longline (keel length to 26 feet)
09	pot gear (keel length to 50 feet)
26	jigs
61	longline (keel length greater than 26 feet)
91	pot gear (keel length greater than 50 feet)
99	other / unspecified gear / missing on ticket

Delivery codes in NMFS/RAM IFQ 94/03/15 Data Feed, species 710

00	null value in database
01	whole fish / food fish
02	whole bait
03	bled only
04	gutted only
05	headed and gutted
07	headed and gutted, western cut
08	headed and gutted, eastern cut
09	headed and gutted, with pectoral girdle
12	salted and split
21	fillets with skin, no ribs
99	landed / discarded

NB: the value "A", in the "size" data field, indicates an ancillary product was delivered

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Harvest codes in NMFS/RAM IFQ 94/03/15 Data Feed

00	null value in database
11	common property fisheries, state managed
16	common property fisheries, federally managed
18	confiscated fish
43	test fishery - stock assessment

ATTACHMENT 2 -- Reported Poundages for Species 710 in the 1994/03/15 NFMS/RAM IFQ Data Extract

94/03/15

1985 GF - SELECTED GEARS, 710 ONLY
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 7024
TOTAL NUMBER OF OTHER SPECIES RECS: 0

GR	YR	DC	DELIVERED_LBS	COUNT
00	85	08	464	6
06	85	01	281	3
06	85	02	125	3
06	85	03	328	2
06	85	04	491	1
06	85	07	21833	30
06	85	08	107636	194
09	85	00	2010	1
09	85	07	8278	3
09	85	08	42891	76
61	85	00	635805	115
61	85	01	71398	21
61	85	02	29582	80
61	85	03	5360	4
61	85	04	6181	2
61	85	05	100347	13
61	85	07	598478	279
61	85	08	14842658	5880
61	85	09	1955	1
61	85	99	532	1
91	85	00	2610920	8
91	85	01	921914	31
91	85	05	137417	9
91	85	07	233080	10
91	85	08	3092393	242
99	85	08	76814	9

94/03/15

1986 GF - SELECTED GEARS, 710 ONLY
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 8554
TOTAL NUMBER OF OTHER SPECIES RECS: 0

GR	YR	DC	DELIVERED_LBS	COUNT
00	86	08	34600	1
06	86	07	15973	23
06	86	08	135305	123
09	86	08	4441	13
61	86	01	185694	43
61	86	02	53826	125
61	86	03	53924	9
61	86	04	53728	6
61	86	05	370436	25
61	86	07	351813	160
61	86	08	25863452	7699
61	86	12	63	1
61	86	99	1729	12
91	86	01	16599	19
91	86	02	3085	1
91	86	05	43972	4
91	86	07	260920	15
91	86	08	3797419	275

ATTACHMENT 2 -- Reported Poundages for Species 710 in the
1994/03/15 NFMS/RAM IFQ Data Extract (continued)

94/03/15

1987 GF - SELECTED GEARS, 710 ONLY
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 14596
TOTAL NUMBER OF OTHER SPECIES RECS: 0

GR	YR	DC	DELIVERED_LBS	COUNT
06	87	01	1184	1
06	87	02	45	4
06	87	04	714	2
06	87	05	564	2
06	87	07	18585	21
06	87	08	204200	367
09	87	08	5330	4
61	87	00	136	1
61	87	01	1270881	239
61	87	02	49751	33
61	87	03	138875	17
61	87	04	17478	4
61	87	05	1100889	225
61	87	07	200841	101
61	87	08	36438621	13505
91	87	01	8334	2
91	87	05	297928	13
91	87	07	28560	15
91	87	08	1560804	40

94/03/15

1988 GF - SELECTED GEARS, ALL SPECIES
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 20294
TOTAL NUMBER OF OTHER SPECIES RECS: 14265

GR	YR	DC	DELIVERED_LBS	COUNT
06	88	01	6716	13
06	88	04	4843	35
06	88	05	22924	8
06	88	07	1625	1
06	88	08	378981	468
06	88	99	4	1
61	88	00	16474	4
61	88	01	1905970	711
61	88	02	1546	11
61	88	03	207198	115
61	88	04	13728	40
61	88	05	8295034	814
61	88	07	74256	47
61	88	08	32702962	17902
61	88	21	574	4
61	88	99	2896	20
91	88	05	235272	29
91	88	07	68480	10
91	88	08	937063	61

includes one record that should be deleted,
confirmed with A Graham 3-22-94 : 88-150435 CC..

ATTACHMENT 2 -- Reported Poundages for Species 710 in the
1994/03/15 NFMS/RAM IFQ Data Extract (continued)

94/03/15

1989 GF - SELECTED GEARS, ALL SPECIES
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 19371
TOTAL NUMBER OF OTHER SPECIES RECS: 12519

GR	YR	DC	DELIVERED_LBS	COUNT
06	89	01	16154	14
06	89	03	3503	1
06	89	04	2520	5
06	89	05	102257	46
06	89	07	82	2
06	89	08	321567	308
26	89	01	621	1
61	89	01	1715085	163
61	89	02	51120	212
61	89	03	104033	78
61	89	04	11648	26
61	89	05	4790589	636
61	89	07	363803	49
61	89	08	34465353	17793
61	89	23	604	2
61	89	99	2291	9
91	89	05	18496	2
91	89	08	6840	24

94/03/15

1990 GF - SELECTED GEARS, ALL SPECIES
ADFG IFQ DATA FEED - STATISTICAL BREAKDOWN

TOTAL NUMBER OF SABLE FISH RECORDS: 20395
TOTAL NUMBER OF OTHER SPECIES RECS: 15795

GR	YR	DC	DELIVERED_LBS	COUNT
06	90	05	3909	7
06	90	07	2444	25
06	90	08	99898	293
06	90	99	37	1
09	90	07	38	1
26	90	08	5538	6
61	90	01	487653	115
61	90	02	66674	252
61	90	03	9158	15
61	90	04	32624	10
61	90	05	3795313	876
61	90	07	784398	422
61	90	08	32393247	18284
61	90	10	12458	1
61	90	15	11607	6
61	90	17	7283	11
61	90	98	18608	21
61	90	99	23999	47
91	90	08	1200	1
91	90	98	10	1

ATTACHMENT 3

Strengths and Limitations of Fields in the 1994/03/15 NMFS/RAM IFQ Data Extract

The primary objective of the ADF&G fish ticket system is to store, in electronic form, the best possible record of harvest as reported on fish tickets to the State. This electronic database of catch is used in a variety of management and research programs by the department, as well as other governmental agencies.

CFEC Permit	This permit is held by the fisher/skipper who operated the vessel which harvested fish. By Alaska statute, information regarding the details of this harvest may not be released without the authorization of this permit holder. While ADF&G routinely provides summary reports of harvest activity as represented in its fish ticket databases, current counsel from the office of the attorney general requires, in the absence of written authorization for release of records from permit holders, a "dilution of four or more permits" in any summary of harvest information that is provided for personal or public use.
ADF&G Vessel	This field contains the state of Alaska vessel identification number provided by the permit holder at the time a request for a CFEC permit was submitted. In most cases, this corresponds to the vessel that was fished when the product was caught. ADF&G staff may, upon suitable evidence, correct this field if a different vessel was used during the actual harvest.
Processor Code	This processor identification number is assigned by ADF&G when an individual or company completes an official "Intent to Operate" with the State. State processor codes assigned by ADF&G may not correspond to processor codes used by other governmental agencies.
Gear Code	ADF&G maintains a table of allowable gear codes that are used for reporting harvest on fish tickets. For species 710 (sablefish) records in this extract, codes are defined for longline, pot gear, and jigs. See attachment 1 for the definition of these codes.
Harvest Code	This field indicates the fishery under which the product was harvested. Codes in this data extract indicate Alaska common property fisheries, federally managed fisheries, CDQ fisheries, cases of catch harvested through test fisheries, and catch which was confiscated due to some fishing violation.
Statistical Area	These six digit codes consist of either a nominal or a geographically based designation for the areas in which catch is harvested. In some cases, catch from an extended trip reporting a single landing may be prorated across several statistical areas, based on percentages reported on the fish ticket.

Landing Date	This date corresponds to the date the product was sold, and usually corresponds to the date the fish ticket was filled out, and signed.
"Catch" Date	The contents of this date field evolved through the period of time spanned by the IFQ data extract. Depending on the year, and ticket type, this date may correspond to the date the harvest was caught, the date the vessel first left port, the first date of "gear soak" corresponding to the landing, or a computed field based on number of days fished.
Species Code	ADF&G maintains harvest history for some 200 species in its fish ticket databases. Code tables for these species, and other codes in the fish ticket databases, are available from the department. Sablefish (black cod) carries a code of 710 in the ADF&G databases.
Pounds	This field, as reported on groundfish tickets, represents the weight, in pounds, of delivered product. Note that this is not the whole, undressed weight, of the fish harvested, but is the weight of the fish after it has been processed. Note that the value that is stored as pounds may have been prorated across several statistical areas, based on information reported on the fish ticket.
Delivery Code	This two digit code indicates the form in which the processed catch was delivered. Specific code values were redefined in 1988, so that physical fish tickets prior to this year may have code values which are different than those stored in the database. See attachment 1 for delivery codes defined for species 710 (sablefish) in this data extract.
Size	This single character field provides a nominal measure of fish size as reported on fish tickets. If the value of this field is an "A", the product reported is defined to be "ancillary", which means the same fish were reported in a different record with a delivery code suitable for computing the whole weight of the fish that was harvested.
Value	This field represents, to the nearest whole dollar, the price that was obtained for the delivered product. It may have been computed from a "price per pound" indicated on the ticket. Many records have no value in this field, as it is an optional data element on fish tickets. Values may also be prorated across several statistical areas.
ADF&G Archives	This archival number consists of a "year", "batching office", "batch number", and "assigned ticket number", and is used by ADF&G and CFEC to place the State's copy of the physical fish ticket in permanent archives. In addition, in the electronic fish ticket databases, an "assigned item number" is used to create an "archive year-ticket-item", which serves as a unique key to fish ticket records. Note that the archive ticket number is not the same as the pre-printed number found on the physical fish ticket.

APPENDIX B
Letter of Transmittal of ADF&G Statistical Areas to NMFS Research Plan

To: Sue Salveson
NMFS / AKR

Date: Feb. 1, 1995

From: Bruce Simonson
Analyst / Programmer
Division of Commercial Fisheries
Management and Development

Subject: ADF&G Groundfish Statistical Areas

Purpose

During 1995 the National Marine Fisheries Service (NMFS) will be using Alaska Department of Fish and Game (ADF&G) fish tickets as a means to assess groundfish processors for their support of the National Pacific Fisheries Management Council's (NPFMC) Research Plan.

NMFS has requested a list of the current statistical areas which are authorized by ADF&G to record the location of groundfish catch on ADF&G fish tickets. NMFS has further requested that each area be designated as "Alaska waters" vs. "non-Alaska waters" for the purpose of determining which landings will be assessed.

The attached list of "six-digit" ADF&G statistical areas has been provided to NMFS technical staff in electronic form, and represents the current departmental groundfish statistical areas as of February 1, 1995. For statistical areas west of Cape Douglas (Longitude 153°W), i.e., ADF&G's Westward Region, which includes the Bering Sea and Aleutian areas, the same statistical areas are used in the recording of crab and groundfish harvest.

ADF&G understands a version of this groundfish statistical area table will be made available to the public on the NMFS/AKR electronic bulletin board, as well as by other means. Please include the following explanation and history with the distribution of this file.

Explanation

The Alaska Department of Fish and Game requires all fish harvested or processed in Alaskan waters to be reported on a fish ticket to the department within seven days of sale. In addition, the department routinely accepts and maintains records of harvest and processing of groundfish

from operators in the EEZ off of Alaska.

A legal report of fish harvest requires identification of the location of catch, as well as identification of the skipper and vessel used in the catch, the first purchaser of the product, the species of catch, pounds, and other information. All records are deemed confidential by the department pursuant to Alaska Statute 16.05.815.

ADF&G maintains a list of statistical areas for reporting harvest on its fish tickets. The department periodically reviews this list, and retains the authority to make updates, additions, and deletions to its statistical areas as required for management of the State's fisheries resources and as clarifications of state waters are made.

ADF&G has prepared an extract of its statistical area table to assist in the determination of processor financial obligations to the Research Plan implemented by NMFS. For the purposes of this program, statistical areas within Alaska's waters, and therefore exempt from billing, have been designated with "U", for "unbillable", under the plan. This extract is dated February 1, 1995.

Questions about ADF&G statistical areas, reporting of harvest on fish tickets, and requests for statistical area charts should be addressed to the ADF&G offices in Ketchikan, Petersburg, Sitka, Juneau, Homer, Kodiak, or Dutch Harbor.

History

ADF&G initiated a system of statistical areas based on longitude and latitude in the early 1980's for its groundfish fishery. This system is also used in the crab fishery for the Bering Sea and Aleutians Islands area.

With a few minor exceptions[1], "squares" with dimensions of 1° of longitude, and ½° of latitude, are defined coincident with integer lines of longitude and half-integer lines of latitude in the waters surrounding Alaska, and extending (indefinitely) through the US EEZ and into international waters.

ADF&G's groundfish statistical areas are 6 digits in length. The first five digits represent a systematic

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[1] The seven squares west of Cape Sarichef, and immediately south, have their northern boundaries set at the latitude of Cape Sarichef (54°36′ N). The southern boundaries of the squares to the north of these squares are similarly adjusted with the Cape.

identification of these 1° x ½° squares[2]. The sixth digit is used by the department to differentiate sections of squares that intersect Alaskan waters, and to partition Alaskan waters into greater resolution where needed.

Review Process

A comprehensive review of the ADF&G groundfish statistical areas was begun in September of 1994, anticipating the role of fish tickets in determining each individual processor's financial obligations to the Research Plan. Although this review was coordinated by ADF&G headquarters in Juneau, the department's regional staff[3] was heavily involved in the determination of the current statistical area table.

The general purpose of this review was to establish a list of ADF&G's current allowable groundfish statistical areas by resolving any discrepancies found in various extant versions of this list. In particular, the following sources of potential statistical areas were reviewed:

i) the historical computerized database of groundfish fish tickets maintained in Juneau,

ii) the statistical area table integrated into ADF&G's groundfish fish ticket data entry computer program,

iii) the version of ADF&G's statistical area table used in summarizing groundfish fish ticket data for data feeds to PacFIN (Pacific Fisheries Information Network),

iv) the version of ADF&G's statistical area table used by NMFS/RAM in Juneau for the sablefish IFQ program, and

v) ADF&G's groundfish statistical area charts, which are routinely made available to the public and industry

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[2] The first two digits of the square's number are the longitude of the eastern edge (degrees west), minus 100. For eastern longitudes (west of 180°), the numbering system assumes corresponding longitudes of 181°, 182°, and so forth. The next two digits are the latitude of the southern edge (degrees north). The fifth digit is either "0", for squares extending from 0 to 30 minutes of latitude, or "3" for squares extending 30 to 60 minutes of latitude.

[3] Bill Bechtol (Homer)
Barry Bracken, Beverly Richardson (Petersburg)
Deidre Holum (Ketchikan)
Al Spalinger, Tom Dinnocenzo, Gail Smith (Kodiak)
Rance Morrison (Dutch Harbor)
Phil Rigby, Ken Griffin, Bruce Simonson (Juneau)

File Layout

The electronic file of ADF&G's groundfish statistical areas, current as of February 1, 1995, contains the ADF&G 6-digit statistical area number followed by a one character designation. This designation is coded as follows:

U unbillable (AK H_2O)
B billable (includes H_2O in the US EEZ)
D Donut hole
R Russian H_2O
W International H_2O (primarily North Pacific)

Known Anomalies

During the review of the statistical area chart, several unresolved issues became apparent.

1) A small amount of area remains unresolved regarding an appropriate designation as State or US EEZ waters.

2) Squares which intersect international lines and/or the US 200 mile limit have not been partitioned so as to differentiate EEZ vs. non-EEZ waters. This includes the so-called "donut hole", US/Canada, and US/Russian boundaries.

3) NMFS statistical area designations (3-digit codes) make no distinction between State and EEZ waters. Unless this system is clarified, these codes may not be used to determine a processor's financial obligation to the Research Plan.

Additional Issues

Several issues remain to be addressed, regarding ADF&G's groundfish statistical areas.

1) Attributes may need to be assigned to each of these statistical areas, including, but not limited to designations of

    a. "Federal vs State" waters
    b. "inside vs outside" Alaska's 3-mile zone
    c. corresponding NMFS 3-digit zone
    d. Research Plan billing areas
    e. NMFS/RAM IFQ areas
    f. PacFIN reporting areas

2) The Federal system of 3-digit zone designations should be clarified and/or modified to differentiate between State and Federal waters.

3) In-season management may require the use of statistical area designations which cannot differentiate between State and Federal waters. It is unclear how the Research Plan will bill harvest with these statistical areas.

Conclusion

ADF&G is happy to assist NMFS in the implementation of the Research Plan. Please feel free to contact me, should you require additional information regarding the department's statistical areas for reporting groundfish harvest.

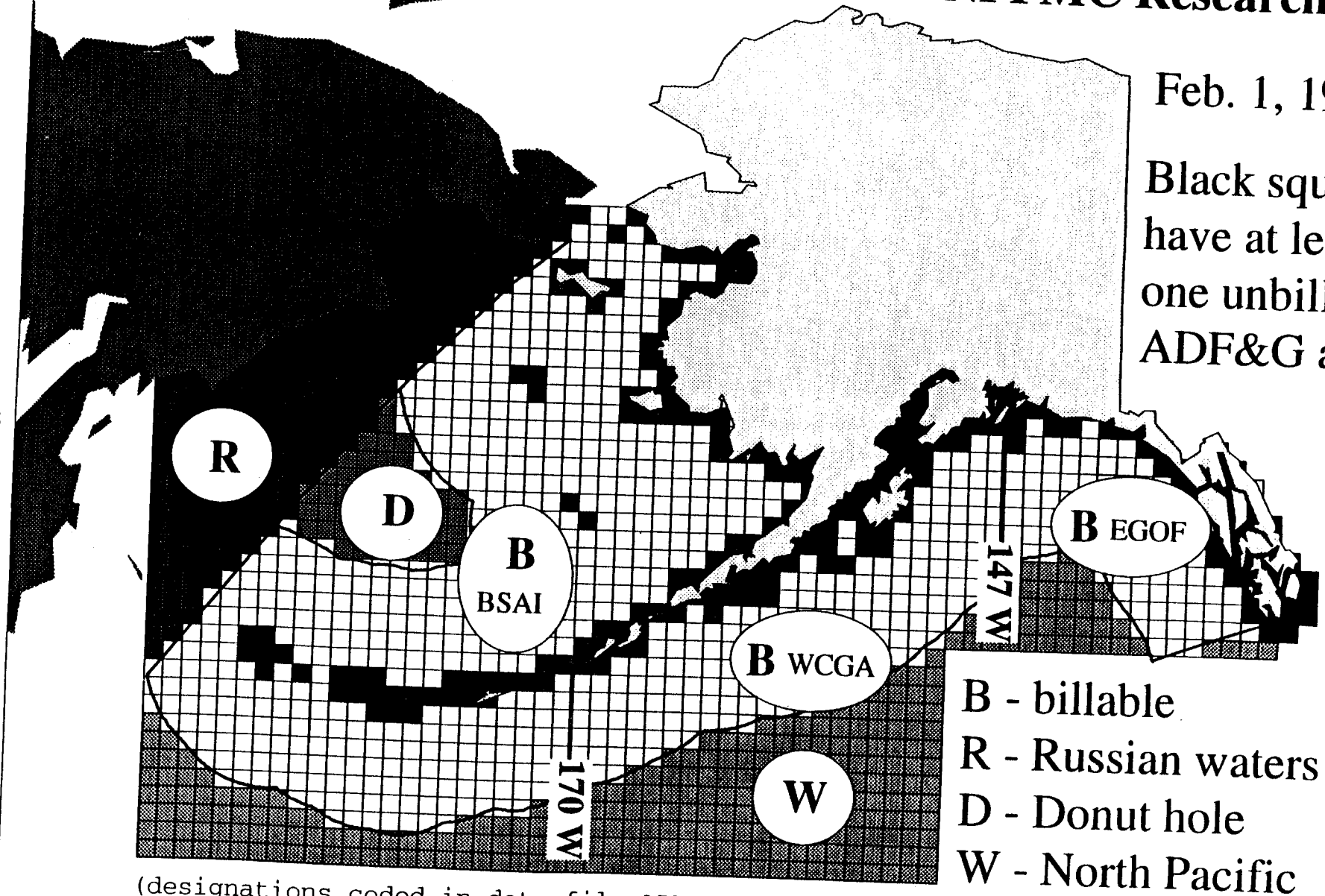
Bruce Simonson
Groundfish Database Manager, ADF&G

attachments:
schematic map of ADF&G groundfish statistical areas
printed list of ADF&G groundfish statistical areas

cc:

ADF&G	Bill Bechtol	NMFS	Ann Graham
	Dave Benton		Kim Rivera
	Barry Bracken		Galen Tromble
	Bob Clasby		
	Carmine Dicostanzo		
	Tom Dinnocenzo		
	Ken Griffin	CFEC	Elaine Dinneford
	Deidre Holum		Kurt Schelle
	Denny Johnson		
	Earl Krieger		
	Paul Larson		
	Rance Morrison	PacFIN	Stan Allen
	Wendy Parker		Will Daspit
	Beverly Richardson		
	Phil Rigby		
	Bruce Simonson	NPFMC	Markus Hartley
	Gail Smith		
	Al Spalinger		

ADF&G Groundfish Statistical Areas - NPFMC Research Plan



Feb. 1, 1995

Black squares have at least one unbillable ADF&G area

B - billable
R - Russian waters
D - Donut hole
W - North Pacific

(designations coded in data file ADFGSTAT.LST)

305431 U	335631 U	355701 B	385730 B	425600 W	455930 B	+476006 U
305501 U	+335632 U	+355702 U	385800 B	425630 B	456001 B	+476007 U
+305502 U	+335633 U	+355703 U	385831 B	425700 B	+456002 U	+476008 U
+305503 U	+335634 U	+355704 U	+385832 U	425730 B	+456003 U	+476009 U
+305504 U	335701 U	+355705 U	385901 B	425800 B	+456004 B	476031 U
305531 U	+335702 U	+355706 U	+385902 U	425830 B	456031 U	+476032 U
315401 U	+335703 U	+355707 U	395330 W	425900 B	+456032 U	+476033 U
315431 U	+335704 U	355731 U	395400 B	425931 B	465330 W	+476034 U
+315432 U	+335705 U	+355732 U	395430 B	426001 U	465400 W	+476035 U
315501 U	335731 U	+355733 U	395500 B	+426002 B	465430 W	+476036 U
+315502 U	+335732 U	355801 U	395530 B	435330 W	465500 W	476101 U
+315503 U	+335733 U	+355802 U	395600 B	435400 W	465530 W	+476102 U
+315504 U	+335734 U	+355803 U	395630 B	435430 W	465600 B	485330 W
315531 U	+335735 U	355830 U	395700 B	435500 W	465630 B	485400 W
+315532 U	345330 W	355900 U	395730 B	435530 W	465700 B	485430 B
315600 U	345401 B	365330 B	395800 B	435600 W	465730 B	485500 B
325330 W	345430 B	365400 B	395830 B	435630 B	465800 B	485530 B
325401 U	345500 B	365430 B	395901 B	435700 B	465830 B	485600 B
325431 U	345531 B	365500 B	+395902 U	435730 B	465901 B	485630 B
+325432 U	+345532 U	365530 B	395931 U	435800 B	+465902 U	485700 B
+325433 U	+345533 U	365600 B	+395932 U	435830 B	+465903 U	485730 B
+325434 B	+345534 U	365630 B	405330 W	435900 B	+465904 B	485800 B
325501 U	+345535 U	365701 B	405400 W	435931 B	465931 U	485831 B
+325502 U	345601 B	+365702 U	405430 B	+435932 U	+465932 B	+485832 B
+325503 U	+345602 U	365731 B	405500 B	436000 U	+465933 B	485901 B
+325504 U	+345603 U	+365732 U	405530 B	+436001 U	466001 B	+485902 B
325531 U	+345604 U	+365733 U	405600 B	445330 W	+466002 U	485931 B
+325532 U	+345605 U	+365734 U	405630 B	445400 W	+466003 U	+485932 U
+325533 U	+345606 U	365801 B	405700 B	445430 W	+466004 U	+485933 U
325601 U	345631 U	+365802 U	405730 B	445500 W	+466005 U	+485934 B
+325602 U	+345632 U	+365803 U	405800 B	445530 W	466031 U	+485935 U
+325603 U	345701 U	+365804 U	405830 B	445600 B	+466032 U	486001 U
+325604 U	+345702 U	+365805 U	405900 B	445630 B	+466033 U	+486002 U
325631 U	+345703 U	365830 U	405931 B	445700 B	466100 U	+486003 U
+325632 U	+345704 U	375330 B	+405932 U	445730 B	475330 W	+486004 U
325700 U	+345705 U	375400 B	415330 W	445800 B	475400 W	+486005 U
335330 W	+345706 U	375430 B	415400 W	445830 B	475430 W	486031 U
335401 B	345731 U	375500 B	415430 W	445900 B	475500 B	+486032 U
335431 B	+345732 U	375530 B	415500 W	445931 B	475530 B	+486033 U
+335432 B	345801 U	375600 B	415530 B	+445932 U	475600 B	+486034 U
+335433 U	+345802 U	375630 B	415600 B	446001 B	475630 B	486100 U
335501 B	+345803 U	375700 B	415630 B	+446002 U	475700 B	495330 W
+335502 B	345830 U	375730 B	415700 B	+446003 U	475730 B	495400 B
+335503 U	355330 W	375801 B	415730 B	455330 W	475800 B	495430 B
+335504 U	355401 B	+375802 U	415800 B	455400 W	475830 B	495500 B
+335505 U	355430 B	375831 B	415830 B	455430 W	475900 B	495530 B
+335506 U	355500 B	+375832 U	415900 B	455500 W	475931 B	495600 B
335531 B	355530 B	385330 B	415931 B	455530 W	+475932 U	495630 B
+335532 U	355601 B	385400 B	+415932 U	455600 B	+475933 U	495700 B
+335533 U	+355602 U	385430 B	416001 U	455630 B	+475934 U	495730 B
+335534 U	355631 B	385500 B	425330 W	455700 B	476001 B	495800 B
+335535 U	+355632 U	385530 B	425400 W	455730 B	+476002 U	495831 B
335601 U	+355633 U	385600 B	425430 W	455800 B	+476003 U	+495832 B
+335602 U	+355634 U	385630 B	425500 W	455830 B	+476004 U	495901 B
+335603 U	+355635 U	385700 B	425530 W	455900 B	+476005 U	+495902 U

ADF&G GROUNDFISH STATISTICAL AREAS:

+ indicates square with more than one ADF&G 6 digit stat area

U - unbillable (AK H2O)
B - billable (US EEZ)
D - Donut hole
R - Russian H2O
W - International H2O

495931 B	514830 W	525200 W	535530 B	545631 B	565330 B	585330 B
+495932 U	514900 W	525230 W	535601 U	+545632 U	565400 B	585400 B
+495933 B	514930 W	525300 B	+535602 B	+545633 U	565430 B	585430 B
+495934 U	515000 W	525330 B	535631 U	545701 U	565500 B	585500 B
+495935 U	515030 W	525400 B	+535632 B	+545702 B	565531 U	585531 U
+495936 U	515100 W	525430 B	+535633 U	+545703 U	+565532 B	+585532 B
+495937 U	515130 W	525500 B	+535634 U	+545704 U	565601 B	585601 U
+495938 U	515200 W	525530 B	+535635 U	545731 U	+565602 U	+585602 B
+495939 B	515230 W	525600 B	535701 U	+545732 B	565631 B	+585603 U
496001 U	515300 B	525630 B	+535702 U	+545733 U	+565632 U	585631 U
+496002 U	515330 B	525701 U	+535703 U	+545734 U	+565633 U	+585632 B
496030 U	515400 B	+525702 B	+535704 B	545801 U	565701 U	585701 B
496100 U	515430 B	+525703 U	+535705 U	+545802 U	+565702 B	+585702 U
504700 W	515500 B	+525704 B	+535706 U	+545803 U	574700 W	585730 B
504730 W	515530 B	525731 U	+535707 U	+545804 B	574730 W	585801 B
504800 W	515600 B	+525732 B	535731 B	545900 U	574800 W	+585802 U
504830 W	515630 B	+525733 U	+535732 U	554700 W	574830 W	585830 U
504900 W	515700 B	525801 B	+535733 U	554730 W	574900 W	585900 U
504930 W	515730 B	+525802 U	+535734 U	554800 W	574930 W	594700 W
505000 W	515801 U	+525803 U	535801 U	554830 W	575000 W	594730 W
505030 W	+515802 B	+525804 B	+535802 B	554900 W	575030 W	594800 W
505100 W	515831 B	+525805 U	+535803 U	554930 W	575100 W	594830 W
505130 W	+515832 U	+525806 U	535831 B	555000 W	575130 B	594900 W
505200 W	+515833 B	+525807 B	+535832 U	555030 W	575200 B	594930 W
505230 W	515901 U	525831 B	+535833 U	555100 W	575230 B	595000 W
505300 W	+515902 B	+525832 U	+535834 B	555130 W	575300 B	595030 W
505330 B	+515903 B	+525833 B	535901 B	555200 B	575330 B	595100 W
505400 B	+515904 B	+525834 U	+535902 U	555230 B	575400 B	595130 B
505430 B	+515905 U	+525835 B	+535903 U	555300 B	575430 B	595200 B
505500 B	+515906 U	+525836 U	+535904 U	555330 B	575500 B	595230 B
505530 B	+515907 U	+525837 U	+535905 U	555400 B	575530 B	595300 B
505600 B	+515908 U	525901 U	+535906 B	555430 B	575601 U	595330 B
505630 B	515931 U	+525902 B	535931 B	555500 B	+575602 B	595400 B
505700 B	+515932 U	525931 B	+535932 U	555531 U	+575603 U	595431 B
505730 B	+515933 U	+525932 U	+535933 U	+555532 B	575631 U	+595432 U
505800 B	+515934 U	526002 B	544700 W	555600 B	+575632 B	+595433 U
505831 B	+515935 U	+526003 U	544730 W	555630 B	+575633 B	+595434 U
+505832 B	+515936 U	526030 U	544800 W	555701 B	575731 B	595501 B
505901 B	+515937 U	534700 W	544830 W	+555702 U	+575732 U	+595502 U
+505902 B	+515938 B	534730 W	544900 W	555731 U	575801 B	+595503 U
+505903 U	+515939 U	534800 W	544930 W	+555732 U	+575802 U	+595504 B
+505904 U	516001 U	534830 W	545000 W	+555733 B	575830 U	595531 U
+505905 U	+516002 B	534900 W	545030 W	564700 W	584700 W	+595532 B
+505906 U	516030 U	534930 W	545100 W	564730 W	584730 W	+595533 U
+505907 U	516100 U	535000 W	545130 W	564800 W	584800 W	595631 B
+505908 U	524700 W	535030 W	545200 W	564830 W	584830 W	+595632 U
+505909 U	524730 W	535100 W	545230 B	564900 W	584900 W	595700 B
505931 B	524800 W	535130 W	545300 B	564930 W	584930 W	595730 B
+505932 U	524830 W	535200 W	545330 B	565000 W	585000 W	595801 B
+505933 U	524900 W	535230 B	545400 B	565030 W	585030 W	+595802 U
+505934 U	524930 W	535300 B	545430 B	565100 W	585100 W	595831 B
506100 U	525000 W	535330 B	545500 B	565130 W	585130 B	+595832 U
514700 W	525030 W	535400 B	545530 B	565200 B	585200 B	604700 W
514730 W	525100 W	535430 B	545601 U	565230 B	585230 B	604730 W
514800 W	525130 W	535500 B	+545602 B	565300 B	585300 B	604800 W

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604830 W	+615502 U	+625502 U	635800 B	646301 B	656330 B	666501 U
604900 W	+615503 U	+625503 U	635830 B	+646302 U	656401 B	+666502 B
604930 W	+615504 U	+625504 B	635900 B	646330 B	+656402 B	674700 W
605000 W	+615505 B	625531 B	635931 B	646401 B	+656403 U	674730 W
605030 W	+615506 U	+625532 U	+635932 U	+646402 B	656430 U	674800 W
605100 B	+615507 U	625600 B	636301 B	+646403 U	664700 W	674830 W
605130 B	+615508 U	625630 B	+636302 U	654700 W	664730 W	674900 W
605200 B	+615509 U	625700 B	636330 B	654730 W	664800 W	674930 B
605230 B	615531 B	625730 B	636401 B	654800 W	664830 W	675000 B
605300 B	+615532 U	625800 B	+636402 B	654830 W	664900 W	675030 B
605330 B	615601 B	625831 B	+636403 U	654900 W	664930 W	675100 B
605400 B	+615602 U	+625832 U	644700 W	654930 W	665000 B	675130 B
605431 B	615630 B	625901 B	644730 W	655000 B	665030 B	675200 B
+605432 U	615700 B	+625902 U	644800 W	655030 B	665100 B	675230 B
605501 U	615730 B	625931 B	644830 W	655100 B	665130 B	675301 U
+605502 U	615800 B	+625932 U	644900 W	655130 B	665200 B	+675302 B
+605503 B	615831 U	626301 B	644930 W	655200 B	665230 B	+675303 U
+605504 U	+615832 B	+626302 U	645000 W	655230 B	665301 B	+675304 U
+605505 B	+615833 U	626331 B	645030 B	655300 B	+665302 U	+675305 U
+605506 U	+615834 B	+626332 U	645100 B	655330 B	665331 B	675331 U
+605507 U	615900 B	626401 B	645130 B	655401 B	+665332 U	+675332 U
605531 U	615930 B	+626402 B	645200 B	+655402 U	+665333 U	+675333 B
+605532 U	616331 B	+626403 U	645230 B	+655403 U	+665334 U	+675334 U
+605533 U	+616332 U	626431 B	645300 B	+655404 U	+665335 U	675400 B
+605534 U	616401 B	+626432 U	645331 B	+655405 U	+665336 U	675430 B
+605535 U	+616402 U	634700 W	+645332 B	+655406 U	665401 B	675500 B
605601 B	616431 B	634730 W	645401 B	+655407 U	+665402 U	675530 B
+605602 U	+616432 U	634800 W	+645402 U	+655408 U	+665403 U	675600 B
605630 B	624700 W	634830 W	+645403 U	+655409 B	665430 B	675630 B
605700 B	624730 W	634900 W	+645404 U	655430 B	665500 B	675700 B
605730 B	624800 W	634930 W	+645405 B	655500 B	665530 B	675730 B
605800 B	624830 W	635000 W	+645406 U	655530 B	665600 B	675800 B
605831 B	624900 W	635030 B	+645407 U	655600 B	665630 B	675830 B
+605832 U	624930 W	635100 B	+645408 B	655630 B	665700 B	675900 B
606330 U	625000 W	635130 B	645431 B	655700 B	665730 B	675931 U
606400 U	625030 W	635200 B	+645432 U	655730 B	665800 B	+675932 B
606430 U	625100 B	635230 B	+645433 U	655800 B	665830 B	676001 B
614700 W	625130 B	635300 B	+645434 B	655830 B	665900 B	+676002 U
614730 W	625200 B	635330 B	+645435 U	655900 B	665931 B	676030 B
614800 W	625230 B	635400 B	645501 B	655931 B	+665932 U	676100 B
614830 W	625300 B	635431 U	+645502 U	+655932 U	666001 B	676130 B
614900 W	625330 B	+635432 U	645530 B	656001 U	+666002 U	676200 B
614930 W	625401 U	+635433 B	645600 B	+656002 B	666031 B	676230 B
615000 W	+625402 B	+635434 U	645630 B	+656003 U	666101 B	676300 B
615030 W	+625403 U	+635435 B	645700 B	656031 B	+666102 U	676330 B
615100 B	+625404 B	+635436 U	645730 B	+656032 U	666131 B	676400 B
615130 B	625431 U	635501 U	645800 B	656101 B	+666132 U	676430 B
615200 B	+625432 U	+635502 U	645830 B	+656102 U	666200 B	676501 B
615230 B	+625433 B	+635503 U	645900 B	656131 B	666230 B	+676502 U
615300 B	+625434 U	+635504 B	645931 B	+656132 U	666300 B	684700 W
615330 B	+625435 B	635530 B	+645932 U	656201 B	666330 B	684730 W
615400 B	+625436 U	635600 B	646001 B	+656202 U	666401 B	684800 W
615431 B	+625437 U	635630 B	+646002 U	656231 B	+666402 B	684830 W
+615432 U	+625438 U	635700 B	646231 B	+656232 U	666431 B	684900 W
615501 U	625501 U	635730 B	+646232 U	656300 B	+666432 U	684930 B

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685000 B	+695234 B	705630 B	716301 B	735030 B	745530 B	756200 B
685030 B	+695235 B	705701 B	+716302 U	735100 B	745600 B	756230 R
685100 B	695301 B	+705702 U	716331 B	735130 B	745630 B	756300 R
685130 B	+695302 U	705730 B	+716332 U	735201 B	745700 B	756330 R
685200 B	695330 B	705800 B	716400 B	+735202 U	745730 B	756400 R
685231 B	695400 B	705830 B	716430 R	+735203 U	745800 B	756430 R
+685232 U	695430 B	705900 B	716500 R	735230 B	745830 B	756500 R
+685233 U	695500 B	705930 B	724700 W	735300 B	745900 B	764700 W
685301 B	695530 B	706000 B	724730 W	735330 B	745930 B	764730 W
+685302 U	695600 B	706030 B	724800 W	735400 B	746000 B	764800 B
+685303 U	695631 B	706100 B	724830 B	735430 B	746030 B	764830 B
+685304 B	+695632 U	706130 B	724900 B	735500 B	746100 B	764900 B
+685305 U	695700 B	706200 B	724930 B	735530 B	746130 B	764930 B
685331 B	695730 B	706230 B	725000 B	735600 B	746200 B	765000 B
+685332 U	695800 B	706301 B	725030 B	735630 B	746230 B	765030 B
+685333 U	695830 B	+706302 U	725100 B	735700 B	746300 R	765100 B
685400 B	695900 B	706331 B	725130 B	735730 B	746330 R	765131 U
685430 B	695930 B	+706332 U	725201 B	735800 B	746400 R	+765132 B
685500 B	696000 B	706400 B	+725202 U	735830 B	746430 R	+765133 U
685530 B	696030 B	706430 B	+725203 U	735900 B	754700 W	+765134 U
685600 B	696100 B	706500 R	725230 B	735930 B	754730 W	+765135 U
685630 B	696130 B	714700 W	725300 B	736001 B	754800 W	+765136 U
685700 B	696200 B	714730 W	725330 B	736031 B	754830 B	+765137 B
685730 B	696231 B	714800 W	725400 B	+736032 U	754900 B	765201 U
685800 B	+696232 U	714830 W	725430 B	736100 B	754930 B	+765202 U
685830 B	696301 B	714900 B	725500 B	736130 B	755000 B	+765203 B
685900 B	+696302 U	714930 B	725530 B	736200 B	755030 B	765230 B
685930 B	+696303 U	715000 B	725600 B	736230 B	755100 B	765300 B
686000 B	+696304 B	715030 B	725630 B	736300 B	755131 U	765330 B
686030 B	696330 B	715100 B	725700 B	736330 R	+755132 B	765400 B
686100 B	696400 B	715130 B	725730 B	736400 R	+755133 U	765430 B
686130 B	696430 B	715201 U	725800 B	736430 R	755201 B	765500 B
686200 B	696500 B	+715202 B	725830 B	744700 W	+755202 U	765530 D
686230 B	704700 W	715231 B	725900 B	744730 W	+755203 U	765600 D
686301 B	704730 W	+715232 U	725930 B	744800 W	+755204 U	765630 D
+686302 U	704800 W	715300 B	726001 B	744830 B	+755205 U	765700 D
686330 B	704830 W	715330 B	+726002 U	744900 B	755230 B	765730 B
686400 B	704900 B	715400 B	726031 B	744930 B	755300 B	765800 B
686431 B	704930 B	715430 B	+726032 U	745000 B	755330 B	765830 B
+686432 U	705000 B	715500 B	726100 B	745030 B	755400 B	765900 B
686500 B	705030 B	715530 B	726130 B	745100 B	755430 B	765930 B
694700 W	705100 B	715600 B	726200 B	745131 B	755500 B	766000 B
694730 W	705130 B	715630 B	726230 B	+745132 U	755530 B	766030 B
694800 W	705200 B	715700 B	726300 B	745201 U	755600 B	766100 B
694830 W	705231 U	715730 B	726330 B	+745202 U	755630 B	766130 B
694900 W	+705232 B	715800 B	726400 R	+745203 U	755700 B	766200 R
694930 B	+705233 U	715830 B	726430 R	+745205 U	755730 B	766230 R
695000 B	+705234 B	715900 B	726500 R	+745206 B	755800 B	766300 R
695030 B	705300 B	715930 B	734700 W	+745207 U	755830 B	766330 R
695100 B	705330 B	716000 B	734730 W	745230 B	755900 B	766400 R
695130 B	705400 B	716030 B	734800 W	745300 B	755930 B	766430 R
695200 B	705430 B	716100 B	734830 B	745330 B	756000 B	766500 R
695231 U	705500 B	716130 B	734900 B	745400 B	756030 B	774700 W
+695232 B	705530 B	716200 B	734930 B	745430 B	756100 B	774730 W
+695233 U	705600 B	716230 B	735000 B	745500 B	756130 B	774800 B

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774830 B	785200 B	795900 B	806430 R	+825134 U	836100 R	855500 B
774900 B	785230 B	795930 B	814700 W	825201 B	836130 R	855530 B
774930 B	785300 B	796000 B	814730 W	+825202 U	836200 R	855600 B
775000 B	785330 B	796030 R	814800 B	+825203 U	836430 R	855630 R
775030 B	785400 B	796100 R	814830 B	825230 B	844700 W	855700 R
775100 B	785430 B	796130 R	814900 B	825300 B	844730 W	855730 R
775131 B	785500 B	796200 R	814930 B	825330 B	844800 W	855800 R
+775132 U	785530 D	796230 R	815000 B	825400 B	844830 B	855830 R
+775133 U	785600 D	796300 R	815030 B	825430 B	844900 B	855900 R
+775134 U	785630 D	796330 R	815100 B	825500 B	844930 B	855930 R
+775135 B	785700 D	796400 R	815131 B	825530 D	845000 B	856000 R
+775136 U	785730 D	796430 R	+815132 U	825600 D	845030 B	856030 R
775200 B	785800 B	796500 R	+815133 U	825630 D	845100 B	856100 R
775230 B	785830 B	796530 R	+815134 U	825700 D	845130 B	856130 R
775300 B	785900 B	796600 R	+815135 U	825730 D	845201 U	864700 W
775330 B	785930 B	804700 W	+815136 U	825800 D	+845202 B	864730 W
775400 B	786000 B	804730 W	815201 B	825830 R	845230 B	864800 W
775430 B	786030 B	804800 B	+815202 U	825900 R	845300 B	864830 W
775500 B	786100 R	804830 B	815230 B	825930 R	845330 B	864900 B
775530 D	786130 R	804900 B	815300 B	826000 R	845400 B	864930 B
775600 D	786200 R	804930 B	815330 B	826030 R	845430 B	865000 B
775630 D	786230 R	805000 B	815400 B	826100 R	845500 B	865030 B
775700 D	786300 R	805030 B	815430 B	826130 R	845530 B	865100 B
775730 B	786330 R	805101 U	815500 B	826200 R	845600 D	865130 B
775800 B	786400 R	+805102 U	815530 D	826230 R	845630 D	865201 U
775830 B	786430 R	+805103 B	815600 D	826400 R	845700 D	+865202 U
775900 B	786500 R	805131 U	815630 D	826430 R	845730 R	+865203 B
775930 B	786530 R	+805132 B	815700 D	834700 W	845800 R	+865204 U
776000 B	786600 R	+805133 U	815730 D	834730 W	845830 R	+865205 U
776030 B	794700 W	805201 B	815800 D	834800 W	845900 R	865231 U
776100 B	794730 W	+805202 U	815830 D	834830 B	845930 R	+865232 U
776130 R	794800 B	805230 B	815900 R	834900 B	846000 R	+865233 B
776200 R	794830 B	805300 B	815930 R	834930 B	846030 R	+865234 U
776230 R	794900 B	805330 B	816000 R	835000 B	846100 R	+865235 U
776300 R	794930 B	805400 B	816030 R	835030 B	846130 R	+865236 U
776330 R	795000 B	805430 B	816100 R	835100 B	846200 R	865301 B
776400 R	795030 B	805500 B	816130 R	835130 B	854700 W	+865302 U
776430 R	795101 U	805530 D	816200 R	835200 B	854730 W	865330 B
776500 R	+795102 B	805600 D	816230 R	835230 B	854800 W	865400 B
776530 R	795131 U	805630 D	816300 R	835300 B	854830 W	865430 B
784700 W	+795132 B	805700 D	816330 R	835330 B	854900 B	865500 B
784730 W	795200 B	805730 D	816400 R	835400 B	854930 B	865530 B
784800 B	795230 B	805800 D	816430 R	835430 B	855000 B	865600 R
784830 B	795300 B	805830 D	824700 W	835500 B	855030 B	865630 R
784900 B	795330 B	805900 D	824730 W	835530 B	855100 B	865700 R
784930 B	795400 B	805930 D	824800 B	835600 D	855130 B	865730 R
785000 B	795430 B	806000 R	824830 B	835630 D	855200 B	865800 R
785030 B	795500 B	806030 R	824900 B	835700 D	855231 B	865830 R
785101 U	795530 D	806100 R	824930 B	835730 D	+855232 U	865900 R
+785102 B	795600 D	806130 R	825000 B	835800 R	+855233 U	865930 R
+785103 U	795630 D	806200 R	825030 B	835830 R	+855234 U	866000 R
785131 B	795700 D	806230 R	825100 B	835900 R	855300 B	866030 R
+785132 U	795730 D	806300 R	825131 U	835930 R	855330 B	866100 R
+785134 U	795800 D	806330 R	+825132 B	836000 R	855400 B	866130 R
+785135 U	795830 D	806400 R	+825133 U	836030 R	855430 B	874700 W

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874730 W	885900 R	905900 R	925830 R
874800 W	885930 R	905930 R	925900 R
874830 W	886000 R	906000 R	925930 R
874900 B	886030 R	906030 R	926000 R
874930 B	894700 W	914700 W	926030 R
875000 B	894730 W	914730 W	
875030 B	894800 W	914800 W	
875100 B	894830 W	914830 W	
875130 B	894900 W	914900 W	
875200 B	894930 B	914930 W	
875231 U	895000 B	915000 W	
+875232 B	895030 B	915030 B	
+875233 U	895100 B	915100 B	
875301 B	895130 B	915130 B	
+875302 U	895200 B	915200 B	
875330 B	895230 B	915230 B	
875400 B	895300 B	915300 R	
875430 B	895330 B	915330 R	
875500 B	895400 B	915400 R	
875530 R	895430 R	915430 R	
875600 R	895500 R	915500 R	
875630 R	895530 R	915530 R	
875700 R	895600 R	915600 R	
875730 R	895630 R	915630 R	
875800 R	895700 R	915700 R	
875830 R	895730 R	915730 R	
875900 R	895800 R	915800 R	
875930 R	895830 R	915830 R	
876000 R	895900 R	915900 R	
876030 R	895930 R	915930 R	
876100 R	896000 R	916000 R	
884700 W	904700 W	916030 R	
884730 W	904730 W	924700 W	
884800 W	904800 W	924730 W	
884830 W	904830 W	924800 W	
884900 B	904900 W	924830 W	
884930 B	904930 W	924900 W	
885000 B	905000 B	924930 W	
885030 B	905030 B	925000 W	
885100 B	905100 B	925030 W	
885130 B	905130 B	925100 B	
885200 B	905200 B	925130 B	
885230 B	905230 B	925200 B	
885300 B	905300 B	925230 R	
885330 B	905330 R	925300 R	
885400 B	905400 R	925330 R	
885430 B	905430 R	925400 R	
885500 R	905500 R	925430 R	
885530 R	905530 R	925500 R	
885600 R	905600 R	925530 R	
885630 R	905630 R	925600 R	
885700 R	905700 R	925630 R	
885730 R	905730 R	925700 R	
885800 R	905800 R	925730 R	
885830 R	905830 R	925800 R	

ADF&G GROUNDFISH STATISTICAL AREAS:

+ indicates square with more than one ADF&G 6 digit stat area

U - unbillable (AK H20)
B - billable (US EEZ)
D - Donut hole
R - Russian H20
W - International H20

APPENDIX C
Initial Letter of Transmittal of ADF&G Fish Ticket Data to Research Plan

To: Kim Rivera
Research Plan Coordinator
NMFS / AKR / FM

Date: Mar. 7, 1995

From: Bruce Simonson
Analyst / Programmer
Division of Commercial Fisheries
Management and Development

Subject: ADF&G Groundfish Fish Ticket Data for Research Plan

You have requested an extract of Alaska Department of Fish and Game (ADF&G) groundfish fish ticket records to assist in determining billings associated with the Research Plan. ADF&G is happy to provide this data, in accordance with the data sharing and confidentiallity requirements of AS 16.05.815.

The extract provided with this cover letter represents the best available ADF&G groundfish fish ticket data as of March 7, 1995. Be advised that ADF&G routinely monitors its fish ticket databases for accuracy, and reserves the option to add, delete, and update records as the need arises.

The data in this extract conforms to the format of data feeds regularly provided to NMFS/AKR Fisheries Management. This format is provided in the attached appendix for the convenience of your technical staff.

As per your request, data in this extract contains records for calendar year 1995 only. There are 6712 individual records in this file, representing data from 1809 tickets.

The electronic file is named N_950307.95, reflecting the date of extract, and the year of data represented in the extract. This file, and the associated file N_LAYOUT.TXT (the format of the data), are contained in compressed form in the file ADFG95.ZIP.

I have provided a schematic map showing harvest locations represented in this data feed for your convenience.

ADF&G anticipates providing future feeds of 1995 data for the Research Plan on the following dates:

May 10, 1995	N_950510.95
July 10, 1995	N_950710.95
September 10, 1995	N_950910.95
November 10, 1995	N_951110.95
January 10, 1996	N_960110.95

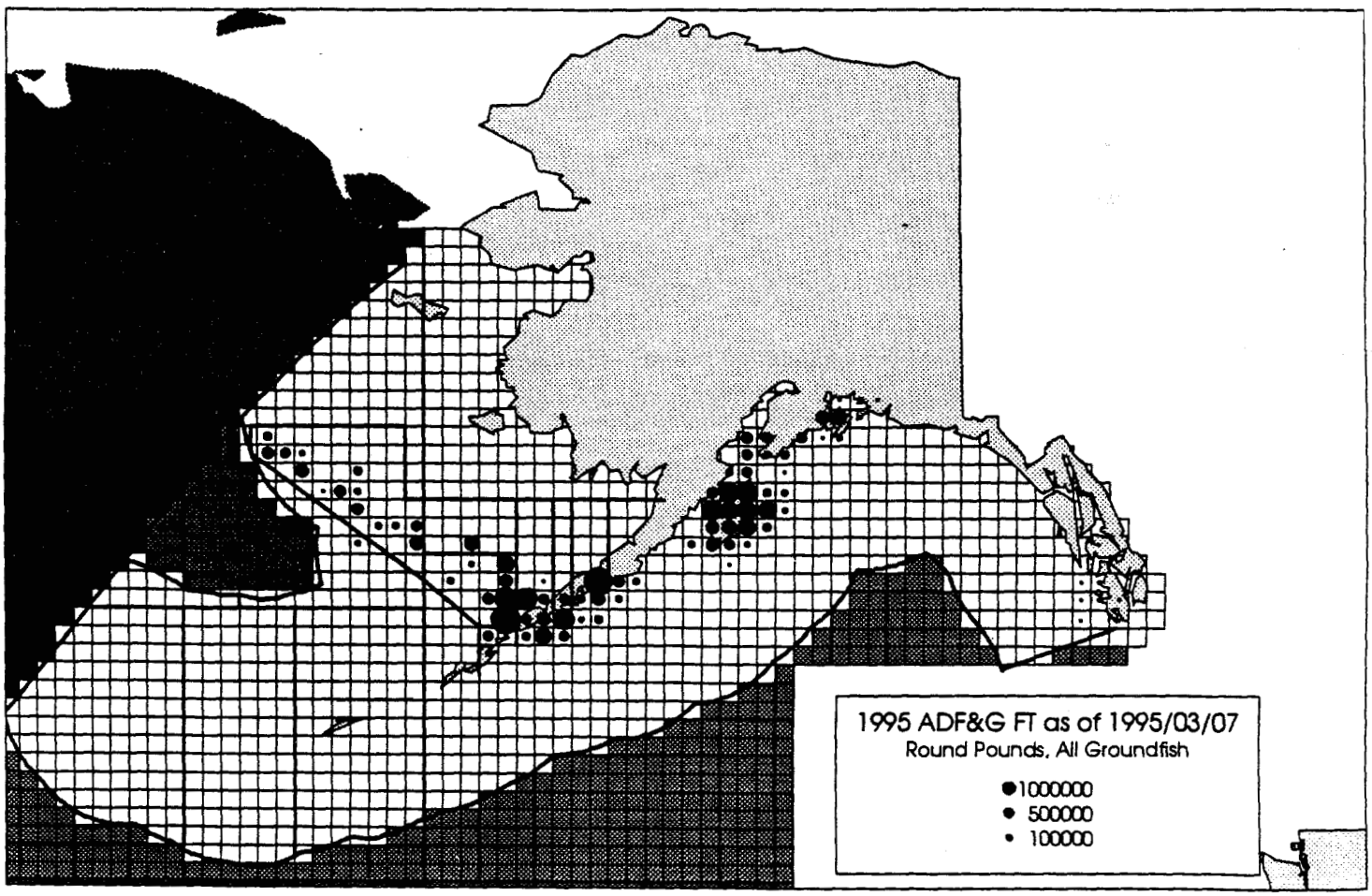
Please feel free to call me (465-6110) if you or your staff have any questions regarding this data extract.

attachment:

N_LAYOUT.TXT - format of data extract provided to NMFS/AKR

cc:

ADF&G	Bill Bechtol	NMFS	Ann Graham
	Barry Bracken		Galen Tromble
	Tom Dinnocenzo		
	Deidre Holum		
	Rance Morrison		
	Beverly Richardson		
	Phil Rigby		
	Gail Smith		



LAYOUT FOR ADF&G GROUNDFISH FISH TICKET DATA TO NMFS

FIELD	START	STOP	DESCRIPTION
ARCHIVE NUMBER	1	19	year, batching area, batch number, assigned ticket number, assigned item number
PRE-PRINTED NUMBER (94 forward)	21	31	type, ticket year (need not be catch year), ticket number
CFEC PERMIT	33	48	permit number (type, serial #, check char), permit year, permit sequence number
ADFG VESSEL NUMBER	50	54	ADF&G vessel registration number
PROCESSOR CODE	56	60	processor code, assigned by ADF&G
GEAR TYPE	62	63	
"CATCH DATE"	65	72	may be catch, date left port, or other
"LANDING DATE"	74	81	date ticket was filled out
PORT CODE	83	85	port of processing, may indicate proc type
HARVEST CODE	87	88	indicates state, federal, test, or confis.
STATISTICAL AREA	90	95	ADF&G 6-character statistical area
SPECIES CODE	97	99	ADF&G 3-character species designator
DELIVERY CODE	101	102	98 vessel discard, 99 processor discard
SIZE CODE/ANCILLARY	104	104	"A" indicates ancillary product
VALUE	106	113	whole dollars
POUNDS	115	122	delivered pounds (not round weight)

APPENDIX D
ADF&G Groundfish Statistical Area Table Corrections and Updates

To: Carmine DiCostanzo
Chief, Computer Services Section, CFMDD

From: Bruce Simonson
Analyst Programmer IV,
Chief Fisheries Scientist Section, CFMDD

Date: November 7, 1995

RE: Corrections to Fish Ticket Statistical Area Table

After nearly a year of work involving staff from each region, we have finished identifying corrections to the statistical area table used in the fish ticket system. I particularly wish to acknowledge the hard work of Gail Smith, Bill Bechtol, Tom Dinnocenzo, Beverly Richardson, Barry Bracken, Tory O'Connell, Rance Morrison, Ken Griffin, Wendy Parker, and Terry Smith in this process. Ann Graham, formerly a contractor to NMFS, and Elaine Dinneford of CFEC, were also involved and very helpful in this process.

The changes recommended refer primarily to groundfish statistical areas. We have, however, recognized the close correlation between groundfish and king crab shellfish statistical areas, and have attempted to recommend common solutions to problems in the statistical area table, wherever possible.

Process

(1) An ASCII file of the fish ticket system's statistical area table was provided to staff around the state. This file was reviewed and proofed against printed statistical area maps and local knowledge in the department.

(2) Corrections were consolidated, conflicting opinions were resolved, and a final table of groundfish and "crab" statistical areas was built for the NPFMC/NMFS Research Plan billing system implemented this year. This table included cross-references to a variety of additional statistical area

systems -- those used by NMFS, and by the North Pacific and Pacific Fisheries Management Councils. (These additional cross-references are addressed in this memo.)

(3) Wendy recently provided me with an ASCII extract of the current fish ticket statistical area table (September 7, 1995). This file was compared to the final table prepared for the research plan, and resulted in the files of requested deletes, adds, and updates that accompany this memo.

Limitations of the Fish Ticket Statistical Area table

As work progressed on this project, several inherent limitations to the fish ticket statistical area table were clarified. I discuss them briefly here, and would be happy to contribute to a solution to these problems, if so desired.

The fish ticket statistical area table is asked to do multiple conflicting duties. Focusing on any one of these functions necessarily compromises the others.

(a) The table is used for data validation at data entry, ...

This is a very useful function for the table - as it forces data entry personnel to verify "bogus" statistical areas by using the F8 over-ride. Allowing this over-ride *is* important, as fish tickets do contain statistical areas which may be at slightly higher resolution than dictated by the table. For example, 535701 is in outside waters, 535702 is inside. A ticket may come in with 525700 (the fish ticket editor could not determine if the catch was from inside or outside waters) ... the harvest is still recorded, but the i/o determination is not possible (undetermined).

(b) *and* ... the table is used for determining ADF&G management area of catch, ...

For groundfish fish tickets, the management area of catch is determined by a look-up into the statistical area table. (This capability has been requested for shellfish fish tickets in Peggy Murphy's memo of October 2, 1995). In the above case, both 535701 and 535702 are in management area K (Kodiak), but since 525700 is not in the table, the management area is undefined for this area, and reports of harvest by management area are inaccurate. (Terry and I have developed a candidate solution to this problem, but it will need to be added to Denny's data entry programs as well as the load programs for the NT database).

(c) *and* ... the table maintains only current statistical areas, ...

Obsolete areas are flagged as data entry errors (as they should be), but obsolete (i.e., historical) statistical areas are not available for reporting. (I have some ideas on how this might be fixed, but I'm not sure that they'll work).

(d) *and* ... the table allows only one ADF&G management area per statistical area, ...

The table forces only one management area per statistical area. We know that this ***not*** the case, in general, for ADF&G fisheries. Within shellfish, for example, the same statistical area has different management areas for king and tanner crab. Bringing salmon into the mix greatly compounds this problem. Fortunately, there is little overlap between the valid statistical area numbers between salmon and the other fisheries, but the problem does exist. (I have no easy answer to this, but I do have some suggestions).

(e) *and* ... the table allows only one management authority per statistical area.

The table forces only one management authority per statistical area. We know that this is ***not*** the case - different fisheries may have different (delegated) authorities for the same statistical area. For example, king crab is managed by the state to 200 miles, groundfish is managed by the federal government from 3 to 200, in most cases. I have provided a workable federal / state designation with this memo, but there may need to be more work done with this field as management authority is extended and declined by the state.

Enhancements to the Fish Ticket Statistical Area Table

The North Pacific Fisheries Management Council is responsible for Fisheries Management Plans in the EEZ adjacent to Alaska waters. Many of the groundfish harvest reports and requests for information area we obtain are expressed in terms of NPFMC management areas and (or) the related NMFS reporting areas.

The enhancement to the fish ticket statistical area table with INPFC area is no longer sufficient to meet these reporting requests. I would like to add two attributes to the statistical area table: (1) NMFS 3-digit reporting area, and (2) NPFMC 4-alpha management area. You may wish to eliminate the old INPFC area from the statistical area table, but I don't know if that is appropriate. In any case, seven bytes will be needed, per statistical area, to carry these attributes.

Impacts on the Fish Ticket Program, and the TIX Reporting System

I have spoken with Denny and Terry about the impacts the changes to the statistical area table will have on existing fish ticket programs. First, the benefits of correcting miscoded entries in the stat area table are obvious. Beyond that:

Data Entry - Denny will need to make sure "area of catch" is alphanumeric in the groundfish fish ticket record. (It may be only alpha at this point).

Reporting - The bulk of the benefits of correcting entries in the statistical area table will be realized here. I understand that there are no PC versions of the fish ticket system

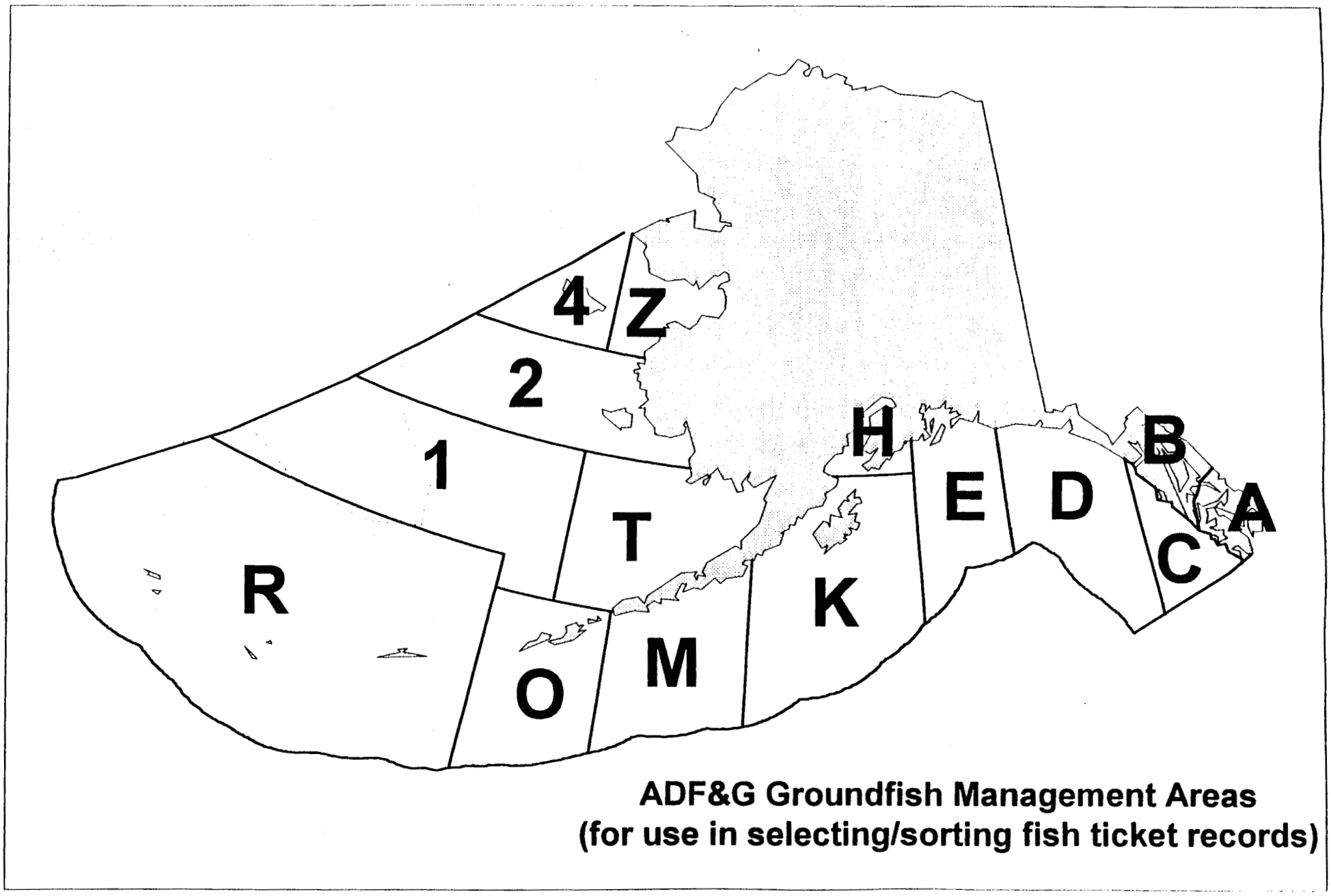
that utilize the INPFC management areas. I do not expect programs to be developed for the PC fish ticket system which will take advantage of the new NMFS and NPFMC areas.

TIX Reporting - The new NMFS and NPFMC areas will need to be added to the TIX reporting system. Terry has already looked at the code in FIRS, and has determined what this will take. Wendy will need to add new "sort" options to the TIX frontend - "NMFS 3 digit zone", and "NPFMC management area". Note that these are sort options only, they are not expected to be candidates for selection. (In general, runs sorted by these areas would grab all groundfish records from the file, and then sort by the requested areas).

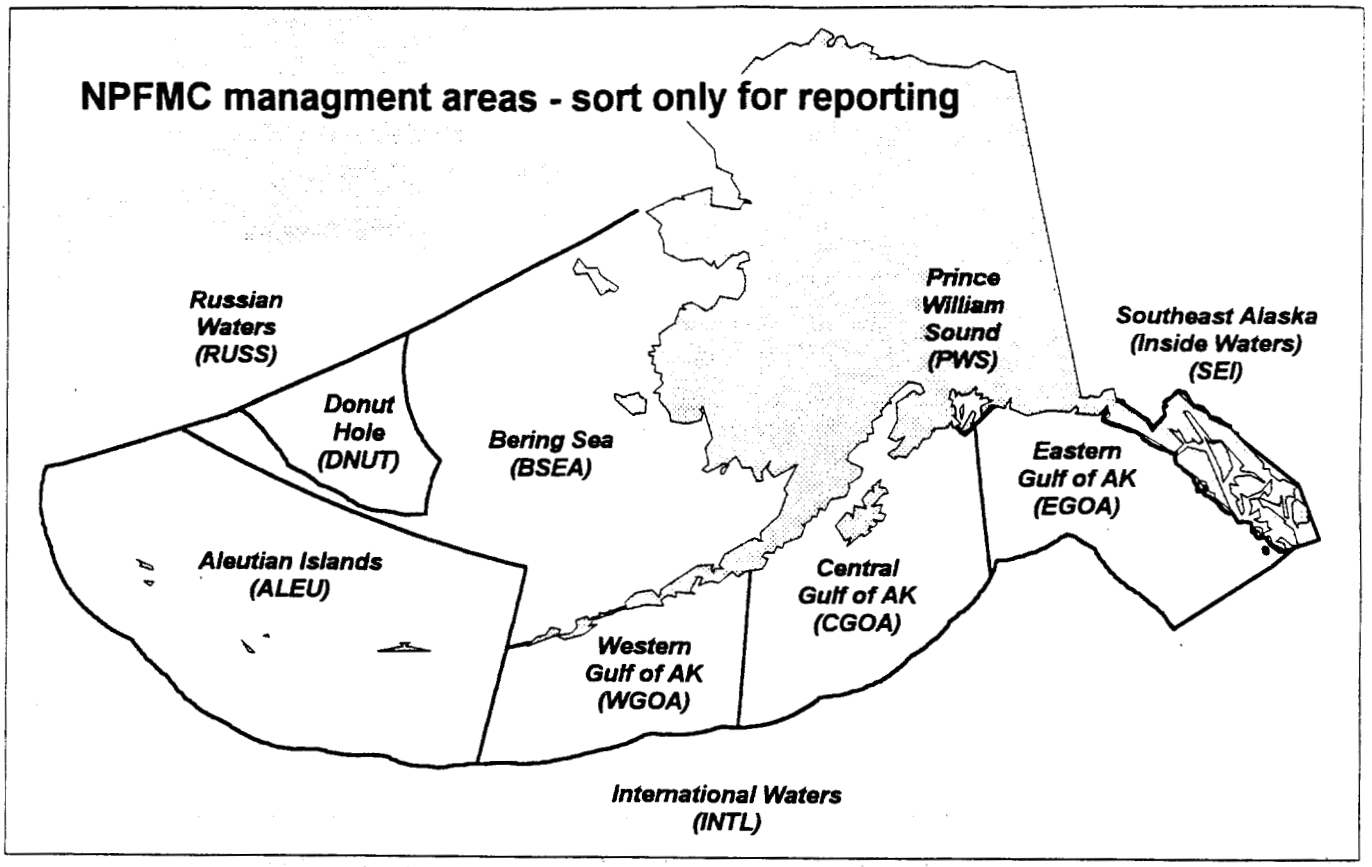
Future Activities

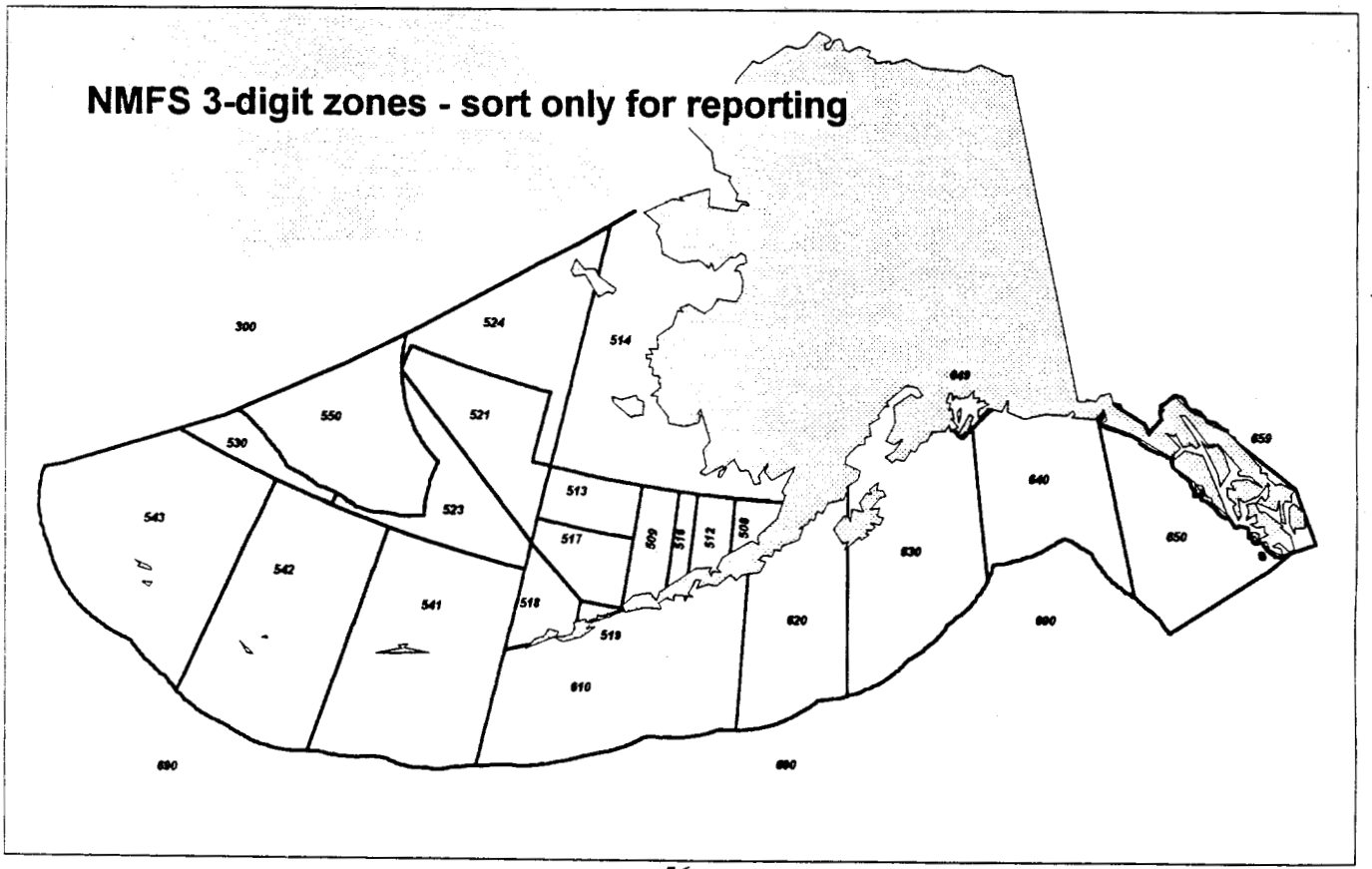
None of the salmon statistical areas were reviewed in this project. I believe this needs to be done. Interesting problems will arise when salmon management areas are delineated, as they will probably not coincide with shellfish or groundfish areas.

NMFS has funded a project which may result in digitizing current ADF&G statistical areas. When this work is completed, I expect it will be easier to control willy-nilly changes to the statistical area table, and a general improvement in data quality for fish tickets. In addition, Computer Services may wish to consider building some standard map-based reports as part of the TIX system at some time.



ADF&G Groundfish Management Areas
(for use in selecting/sorting fish ticket records)


NPFMC managment areas - sort only for reporting
Russian Waters (RUSS)
Donut Hole (DNUT)
Bering Sea (BSEA)
Aleutian Islands (ALEU)
Prince William Sound (PWS)
Southeast Alaska (Inside Waters) (SEI)
Eastern Gulf of AK (EGOA)
Central Gulf of AK (CGOA)
Western Gulf of AK (WGOA)
International Waters (INTL)


NMFS 3-digit zones - sort only for reporting
300
524
514
550
521
530
543
523
513
517
542
541
518
519
610
620
630
640
650
659
690
680